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50th YEAR

NO. 3



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American Bee Journal



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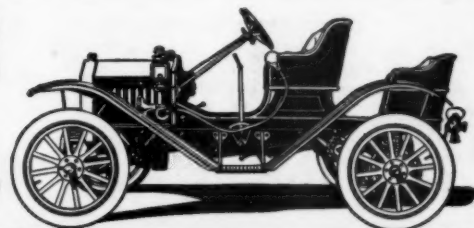
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DR. C. C. MILLER, Associate Editor.

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Blunder in Treating European Foul Brood

In Gleanings for 1905, where E. W. Alexander first gave to the public his treatment for European foul brood, he directs as follows:

"Go to every diseased colony you have and build it up either by giving frames of maturing brood or uniting two or more until you have them fairly strong. After this, go over every one and remove the queen; then in 9 days go over them again, and be sure to destroy every maturing queen-cell, or virgin if any have hatched. Then go to your breeding-queen and take enough of her newly-hatched larvae to rear enough queen-cells from to supply each one of your diseased queenless colonies with a ripe queen-cell or virgin just hatched. Those are to be introduced to your diseased colonies on the 20th day after you have removed their old queen, and not one hour sooner, for upon this very point your whole success depends; for your young queen must not commence to lay until 3 or 4 days after the last of the old brood is hatched, or 27 days from the time you remove the old queen."

Dr. Miller comments on the foregoing thus, from his own experience:

Four years later, when I came to try the cure, instead of going back and looking up carefully just what Mr. Alexander had said, I made the inexcusably stupid blunder of understanding that it was a *laying* instead of a *virgin* queen. So with no thought of departing materially from the Alexander treatment, I introduced a virgin 10 days after removing the queen, with the idea that she would begin laying at about the time I understood that Mr. Alexander gave a laying queen. The strange part of it is that no one called my attention to the blunder until late in January, 1910.

While I offer my humblest apologies for thus blundering, and for misrepresenting Mr. Alexander's treatment, I may be allowed to say that, after all, the blunder is hardly regrettable, upon the whole, if it shall turn out, upon further trial, that others find the cure reliable.

The treatment I used was certainly successful in most cases, and it is entirely possible that the cases of failure were because the subjects under treatment were not strong enough. For an essential part of

treatment, as directed by Mr. Alexander, is to make the colonies strong. Please notice that it is not to have strong colonies, nor to make strong part of the colonies, but to make strong any colony that is to be treated; for it is doubtful if any colony badly affected is ever strong enough to be treated without being strengthened by the addition of brood or young bees, or both.

A comparison of the two methods will show that if the plan I used proves to be generally successful—always keep that "if" in mind—it has a very material advantage over the regular Alexander treatment. As compared with the regular Alexander plan, the period of queenlessness is cut exactly in two by the Miller plan—if I may be pardoned for thus naming it, not for the sake of taking away any credit due Mr. Alexander, but for the sake of brevity. For small credit is due me for any improvement that may have been made by sheer stupidity. Moreover, there is this notable difference: By the Alexander treatment the bees are *hopelessly* queenless for 11 days; never for an hour by the Miller treatment.

Cutting out 10 days of queenlessness, and relieving the bees of 11 days of listlessness when without hope of ever having a queen, with the possibility of laying workers upon the scene, and that in the midst of a harvest, ought to make no little difference in the work of the season; so much difference, indeed, that it may be well worth while to give the plan a fair trial. C. C. MILLER.

Drone-Laying Queens and Laying-Workers

When the work of egg-laying has gone wrong, and only drone-brood is found, one can tell pretty well by inspection of the combs whether it is a case of a drone-laying queen or of laying-workers. If there is a drone-laying queen, she seems unconscious that anything is wrong with her laying, and lays just as she would if all her eggs produced workers. The eggs are placed compactly in worker-cells, drone-cells generally being avoided, even if drone-cells are plenty. On the other hand, laying-workers make irregular work, skipping some cells and perhaps laying

more than one egg in each of other cells. If drone-cells are within reach, they are preferred. The most reliable sign, however, is their preference for queen-cells. If you find a queen-cell with more than a single egg in it, you may be pretty certain it is the work of laying-workers. Sometimes you will find half a dozen or a dozen eggs in a queen-cell, some of them generally looking not plump but withered, and perhaps there may be several such queen-cells in the hive. You may be sure no queen was ever guilty of such work.

Distance for Pure Queen-Mating

F. W. L. Sladen says in the British Bee Journal:

"I would not rely on isolation for pure mating anywhere in Britain, except on an isolated island. Supposing 3 miles were the limit of flight of queens and drones, one would have to ascertain by careful inquiry that no bees were kept within a radius of over 6 miles, and then one could not be sure that no colonies existed in hollow trees or in buildings, or that swarms might not settle in the district."

On the next page the editor goes still farther:

"It would be difficult to prevent cross-breeding by removing the bees unless you can make sure that there are no other bees within 10 or 12 miles of you."

While there may be no *entire* security except at such distances, some think that the majority of matings occur between queens and drones whose respective homes are not more than a mile apart.

Comb Versus Extracted Honey

"It seems to me that during the last few years many bee-keepers are given over entirely to producing extracted honey, and too little is being written on the subject of expertly running apiaries great and small for comb, quantity and quality. I would like to see the bee-papers classify their articles, and have a thorough department each time for comb, and one for extracted honey. We could then read and study all, but quickly consult, if we wished, the portion devoted to that we were chiefly interested in."—A CORRESPONDENT.

In some respects the interests of bee-keepers are the same everywhere, and in other respects their interests are quite diverse. It is natural and right that each one who subscribes for a bee-paper should desire to have his own interests fairly considered, and the man

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who is interested in comb honey alonet does not care to read through an entire article only to find when through with the article that it is of interest only to the man who works for extracted honey. Especially in a crowded time it would be a convenience if the comb-honey producer could have a department to himself, and also the producer of extracted honey. But when it comes to putting such a plan into actual practice, it is not so easy as might be supposed. In reality, the number of articles that are of interest only to one or the other class of producers is very small, and it is to be feared that if all the other articles in any one number were to be assigned to one or the other departments the one who did the assigning would have a rather impossible task.

Take the January number of the American Bee Journal. About 88 per cent of the items and articles are of equal interest to both classes of producers, and it would be impossible to say whether they should go under the head of production of comb or of extracted honey. Of the remaining matter, the bulk of it refers to bulk comb honey, and while this belongs to comb rather than extracted, still there is some extracted honey in the case. Only one article can fairly be said to belong exclusively to the extracted department, and although a larger number refer to comb than extracted, they are not entirely without interest to extracted men.

This leads to a question whether really more attention is given to extracted honey than to comb. Possibly the January number is exceptional, but the likelihood is that there are not lacking those who think comb honey gets the lion's share of attention.

The foregoing count is without reference to the Question-Box, which stands in a class by itself, there being no rejections, but all questions sent being answered, and these questions ought to show pretty clearly in what the questioners are interested. It so happens that only two of the letters could be assorted as belonging exclusively to one department, and they both belong in the comb-honey department.

On the whole, it is perhaps not practicable to do more than to indicate so far as may be by the heading, to which class an article belongs. This has generally been done, but it may do no harm to have it even more especially in mind hereafter.

Delayed Fertilization and Laying Workers

A bee-keeper reported in Praktischer Wegweiser a case in which a virgin began work as a drone-layer, and then when 6 weeks old began laying worker-eggs. From this he concluded that after she failed to be fertilized promptly she began laying drone-eggs, and after laying thus for a time she was then fertilized. Herr Dobbratz explains that a wrong conclusion was drawn from the facts. Under special circumstances fertilization may be long delayed. He has known cases in which virgins were still capable of fertilization when 6 weeks old. Only in the rarest cases will a virgin become a drone-layer under that age. If within

his time one finds drone-brood present, and then later—say at the end of the 6 weeks—the queen turns out to be laying worker-eggs all right, it is a clear case that the drone-eggs were not laid by the queen. He and others have had cases in which workers laid eggs while a virgin or a queen-cell was present, and these laying-workers continued until the queen was fertilized and began laying.

Comb-Honey Production

EDITOR YORK:—Do you think it would be of sufficient interest to enough of those who read the American Bee Journal, to have an article by some suitable person telling how he handles his 'comb honey from the time it is taken off the hive until it is sold? In other words, how he cleans the sections, grades the honey, what kind of shipping-cases he uses, who buys the honey, etc.

Most of my honey is sold to people that come here to spend the summer, and I want to know how to prepare it in the best way for market.

The American Bee Journal is all right, and I value the articles by G. M. Doolittle enough to take it for those articles alone, even if there was nothing else.

Benzonia, Mich. JOHN A. VAN DEMAN.

This letter voices the desire of every ambitious beginner who desires to produce honey of the very best grade. The demand has been met more than once in the past, and will no doubt be met more than once in the future. But in the nature of the case it must be seen that if an article or a series of articles of the kind should be published each

time a new member joins the American Bee Journal family, the repetition of such article or articles would be so frequent that there would be serious complaint of room thus used to crowd out fresher matter. Unless something at least partly new can be given, there is hardly justification for the publication of such articles. In reality, their place is rather in bee-books than bee-periodicals. The information desired by Mr. V. is amongst the fundamental matters in bee-keeping—matters that all bee-keepers are sure to need, and so are discussed in the text-books on bee-keeping.

As already said, the likelihood is that something will be given in the desired line whenever anything new is to be had, and in the meantime it may be mentioned that there are at least two books written especially to tell the whole story of the production of comb honey from beginning to end. They are "Forty Years Among the Bees," by Dr. C. C. Miller, and "A Year's Work in an Out-Apiary," by G. M. Doolittle. Our correspondent will find them exactly what he asks for, with such full details as could not so readily be given in the columns of a periodical. Dr. Miller's book is mailed for \$1.00, or with the American Bee Journal for one year—both for \$1.75; the Doolittle book is mailed for 50 cents, or with the American Bee Journal one year—both for \$1.40.



Our Front Page Pictures

The picture shown in the upper left-hand corner was sent us by F. Greiner, of Naples, N. Y. It shows his apiary after a heavy snow-storm; the snow being piled up on the hives, and hanging on the trees like so much cotton. It is a beautiful midwinter picture, we think.

The upper right-hand picture is a view of the apiary of Chas. T. Dennis, of Lake Preston, S. Dak. It was taken from the rear, and does not show the first rows. The hives on the right are "empties." Mr. Dennis reports having had good success with bees at his location, up to last year.

The large lower picture shows Mr. Wm. Stolley and his shed-apiary. On another page of this number will be found Mr. Stolley's report for last year, and also something about his experience in using bee-stings as a remedy for inflammatory rheumatism.

The hives shown on the top of Mr. Stolley's shed-apiary are decoys for catching stray swarms. We understand that he has caught quite a number of runaway swarms in those roof-hives. Mr. Stolley himself seems to be taking it easy in a rocking chair in the center

of the picture, seemingly to be "monarch of all he surveys." Just now, he and his wife are spending a few weeks of the cold winter weather down in Florida, where he reports having a good time. Mr. Stolley is one of those jolly Germans one often meets in the wild and woolly West. We have had the pleasure of seeing him at one or two of the National conventions of bee-keepers.

Dr. Lyon's Lecture on Bees

Rev. D. Everett Lyon, Ph. D., of New York, delivered his illustrated lecture on "The Story of the Honey-Bee," before the Unity Club of Cincinnati, Feb. 13, 1910. Dr. Lyon is an enthusiast on bees, and while he fills his pulpit at home, he has traveled much to study bees and bee-keeping. His stereopticon slides are made from negatives of his own taking, and show most clearly the activities and habits of bees.

Mr. Fred W. Muth, who heard the lecture, and was instrumental in securing Dr. Lyon, has this to say about both Dr. L. and his bee-lecture:

Dr. Lyon's lecture was everything that could be desired; in fact, we have heard lectures on this platform for 10 years, and

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Dr. Lyon's delivery ranked among the first-class orators in every respect. The story of the honey-dew was never so well and entertainingly told as it was yesterday, by Dr. Lyon. He is on for several lectures in the East. I think it would be a wise thing for the National Bee-Keepers' Association to get Dr. Lyon to lecture on the honey-bee before Chautauqua assemblies, or on any other good lecture course. He would do the bee-keepers at large a wonderful amount of good, I think.

Dr. Lyon is a first-class man, and as an orator among the bee-keeping ranks I have not seen his equal. If ever a man made honey-eaters, or if ever a man made it plain about bee-keeping, it was Dr. Lyon in his lecture. It was worth a trip from Chicago to Cincinnati several times to listen to him, and quite a number of people who heard him say the same.

FRED W. MUTH.

Honey in Crane Cellular Cases

EDITOR YORK:—I notice on page 41, that in a sketch of my life, I am reported as receiving 5 cents a pound more for honey put up in my improved shipping-case, than otherwise. Now 5 cents a pound is a good deal—in fact, a great deal more than the facts warrant. Had you stated that we get 5 cents a case more when honey is packed in our improved cases, you would have stated the exact truth. We think 5 cents a case extra is pretty good, as they weigh only about one-half that of glass-and-wood cases. The saving in freight, with the extra 5 cents, half pays for the cases, which is worth looking after these days.

J. E. CRANE.

Well, yes, that makes quite a difference, whether it is 5 cents a case or 5 cents a pound more for honey. We are glad to make the correction, as we do not wish to misrepresent in any particular in the American Bee Journal. The truth is good enough for us, and of course our readers want only that. But mistakes will occur in the best regulated families as well as offices.

To Illinois Bee-Keepers

Some may have been overlooked in the sending out of 1200 blank petitions for a foul brood law, and if they will notify the Secretary, Jas. A. Stone, Route 4, Springfield, Ill., they will be supplied with proper blanks.

Also, if any in this State wish to become members of the Illinois State Bee-Keepers' Association, \$1.00 will pay the annual fee and entitle to membership as well in the National Association for one year, and also a cloth-bound copy of the Ninth Annual Report, which will be published some time in March. It will embody the reports of the last conventions of the Illinois State, Chicago-Northwestern, and National Associations.

JAS. A. STONE, Sec.

Rt. 4, Springfield, Ill.

A Japanese Bee-Paper

If Japanese bee-keepers do things wrong side foremost, as their bee-journal is printed, it must be a confusing business. This office is in receipt of "The Friend of Bee-Keepers," now in its second volume. Besides the name, there is an advertisement of queens in English, the rest being in hieroglyphics worse than Greek. A picture of Langstroth occupies a full page, and he appears to be in the English language. The last page is the first, the lines on the page run from top to bottom instead of from left to right, and even the numbers seem to be wrong end to, for 10 is written 01. Yet doubtless honey tastes just as sweet in Japanese as in plain English.

Important Questions on Honey-Dew

We have received the following from Dr. E. F. Phillips, In Charge of Apiculture, in the Bureau of Entomology, U. S., Department of Agriculture, Washington, D. C.:

DEAR MR. YORK:—Since honey-dew was so abundant in many parts of the Eastern United States during the past season, it would be well for the bee-keeping industry to know, if possible, what conditions brought this on. I should very much appreciate it if the readers of the American Bee Journal who had honey-dew last year would answer the following questions, and in addition give any facts which might help in solving this problem:

1. Was there any honey-flow from flowers?
2. Did bees work on honey-dew and flowers at the same time?
3. What was the average amount of honey-dew per colony?
4. On what kind of trees were the insects which produced the honey-dew?
5. Give dates showing the duration of the honey-dew yield.
6. Was much honey-dew used for winter stores?
7. Is the mortality of colonies up to the present date any greater than usual among your own and neighboring bees?
8. What information have you as to the extent of territory in which honey-dew was abundant?

Replies may be directed to the Bureau of Entomology, Washington, D. C.

Respectfully,
E. F. PHILLIPS,
In Charge of Apiculture.

We hope all of our readers who can do so will send the answers promptly, as requested.

The Michigan State Convention

This was held at Lansing, Mich., Feb. 23 and 24, 1910. There was a good attendance and an interesting meeting. We had the pleasure of being present, and enjoyed once more renewing acquaintances among our old Michigan friends, and making some new ones. The officers were re-elected for the ensuing year, as follows:

President—L. A. Aspinwall, of Jackson.

Vice-President—E. D. Townsend, of Remus.

Secretary-Treasurer—E. B. Tyrrell, of Detroit.

We expect to publish a brief report of the meeting next month.

The next annual meeting will be held at Grand Rapids, the date to be fixed by the Executive Committee.

Editor Sick and 48 Pages

We had planned to have this number of the American Bee Journal out on time, but unfortunately, on returning from the Michigan convention, we were taken with an attack of the grippe, which bordered closely on pneumonia. This, with 16 extra pages, perhaps is sufficient explanation why this number is a few days late.

We aim to mail the Bee Journal from the 12th to the 15th of the month. If we closed the forms earlier in the month than we do, there would often be quite a loss on advertising, which we don't feel that we can afford. And as a bee-paper is not like a newspaper, it is not imperative that it be received exactly on a certain date. Its contents are not of the spoiling character; they will keep all right until used—read.

We are recovering slowly from our sickness, but whenever another convention is held in a place nearly as cold

as a barn, we will simply ask to be excused from remaining, if we are there. We ought to have known better the last time. But it takes a long time to learn some things.

A Night at Dr. Miller's

It was our great privilege to be at the home of Dr. C. C. Miller, at Marengo, Ill., the night of Feb. 21, 1910 (our own birthday). As we remained all night we were there the morning of Washington's Birthday also. We found the Doctor and his family all very well indeed. The mother of Mrs. Miller and Miss Emma Wilson (who, as many know is also a member of Dr. Miller's family) was 91 years old, Feb. 15th. She is pretty well for one of her extreme age.

It is always an oasis in our own life to spend even a few hours with Dr. Miller and his beloved family. The Doctor will be 79 years old next June, but he doesn't seem to be a day older—in heart and many other ways—than he was when we first met him, some 25 years ago. May he live to be a hundred—"and then some."

Clean Bee-Keepers in New York

According to J. E. Crane, New York bee-keepers are not badly sodden with whiskey and tobacco. He reports an interesting convention of New York bee-men at Albany, and says this in Gleanings:

"And Prohibitionists seemed at the New York convention about as plentiful as bee-keepers. At any rate, Dr. Miller, or Pres. York, of the National Bee-Keepers' Association, would have felt quite at home; and, besides all this, it was quite a comfort to me when I got home not to have my wife tell me that I smelled of tobacco smoke."

If we were publishing a newspaper instead of a bee-paper, we would call for good reasons for boys and men to use tobacco. We have never heard a real good reason for its use, except perhaps as a poison or insect-killer. Sam Jones once said the reason he chewed tobacco was "to get the juice out!" But he must have had to chew the juice in before he could chew it out.

Gleanings had this paragraphic definition of tobacco in its Jan. 15th issue.

"TOBACCO—A nauseating plant that is consumed by but two creatures—a large green worm and man. The worm doesn't know any better."—CALVIN MOON.

There doesn't seem to be any "Moon-shine" about that.

We hope that at least the boys and young men in the families of the readers of the American Bee Journal will be smarter than the "large green worm!"

North Texas Convention

The North Texas Bee-Keepers' Convention will meet Wednesday and Thursday, April 6 and 7, 1910. All interested are cordially invited.

Blossom, Tex. W. H. WHITE, Sec.

Illinois Bee-Keepers, Take Notice

The blank petitions sent out by the secretary of the Illinois State Bee-Keepers' Association for a foul brood

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law, are to go before the 47th General Assembly, which does not meet till next winter (the present session is a special of the 46th Assembly).

These petitions were sent out at the time of sending the membership blanks, in order to save extra postage. But we advise getting them filled early, while there is no rush in work—and before they are forgotten.

The copy for our Ninth Annual Report is beginning to go to the printer, and we hope to get it finished by the last of March (depending upon how much the printer is rushed). We will also place the list of members and statistical report in the back of the Report, so it will include all the members who send in their \$1.00 fee till the time the Report is finished. We will also name, in the end of the Ninth Annual Report, the senatorial district that leads in number of signatures sent in (or perhaps the highest 3, in order); and also the name of the three persons who send in the greatest number of signers. (N. B.—They must sign their own names). A list of names does not count—they must be *signers*. If you are not sure about the number of your senatorial district, never mind it, for we are getting so many that are wrong.

We will go over the whole list and make corrections.

Our next Report will cost, with the postage for sending out, as nearly as I can estimate it at present, an even one hundred cents per copy. Those who do not get their names in pretty soon may have to take a paper-covered copy.

JAS. A. STONE, Sec.

Route 4, Springfield, Ill.

California State Convention

We had the best attendance at the recent meeting of the California State Bee-Keepers' Association that we have had for years. We could not get through with our program, and more was accomplished than in many of the previous meetings. We assembled one day longer than usual.

We were honored with Eastern talent at our convention. Mr. Harrington, of Ohio; Mr. Coggs, of New York; and other experts from New York and other States, were present.

We have not had a good rain for over two weeks, and the prospects are not bright for honey. If we do not soon have rain many colonies will have to be fed.

H. M. MENDLESON.

Ventura, Cal., Feb. 21.



Conducted by EMMA M. WILSON, Marengo, Ill.

Sweet Miss Honey-Bee

No one's makin' speeches
'Cept de honey-bee;
De principles she teaches
Sounds right sensible to me.
She says: "Keep lookin' fo' de sweets
Dat's growin' eb'rywhere,
An' if some no-count weeds you meets,
Pass on, an' don't you care."

As she comes a-bringin'
De goods f'um roun' de farm,
She says: "A little singin'
Ain' gwine to do no harm."
I tells you, lots of us would get
Mo' joy f'um life if we
Kep' follerin' de 'sample set'
By sweet Miss Honey-Bee.

—Washington Star.

"Honig-Lebkuchen"

Some time ago a friend in Germany sent me an excellent recipe for making honey-cakes, or "Honig-Lebkuchen," as the Germans call them. The cakes are so good that I thought perhaps the readers of the American Bee Journal would like a copy of the recipe, and I send it herewith as follows:

Take extracted honey one quart; sugar, 1½ lbs.; pastry flour, 3 lbs.; almonds chopped fine, ½ lb.; citron chopped fine, ½ lb.; candied orange peel chopped fine, ½ lb.; rinds of 2 lemons chopped fine; powdered cinnamon, 1½ oz.; powdered cloves, ½ oz.; fruit-juice, 1 wine-glass full; bakingsoda 2 pinches.

In making the cakes, first make the honey hot, then put the sugar into it, then the finely chopped almonds, citron and orange or lemon peel. After this has cooled put two knife-points full of baking soda in it, then one wine-glass full of any kind of fruit-juice, and then mix in the flour. Mix everything

light and careful, and roll out somewhat like thick ginger-cookies, and bake in a good, hot oven.

These cakes improve with age, and will keep any length of time. They should be made at least 3 or 4 weeks before the time desired for use. When first made they are hard, but after a while they are delicious.

In making they can be cut into squares or fancy figures or shapes. Before putting them in the oven they should be brushed with a syrup made from sugar and water. The oven must have a steady, even heat—neither too hot nor too cold. The pans in which they are baked should be buttered and dusted with a little flour before the cakes are put in for baking.

Many families accustomed to eating these cakes think they could not properly celebrate Thanksgiving or Christmas without them.

Cheviot, N. Y.

F. D. CLUM, M. D.

These honey-cakes are said to be quite an institution in the father-land, especially at fairs and on other public occasions, much as gingerbread is said to have been an institution formerly in parts of this country on training and election days. It is quite possible that some sister whose early days were spent in Germany will be vividly reminded of the past upon reading over the recipe so kindly sent by Dr. Clum.

A Sister Tells How to Produce Chunk or Bulk-Comb Honey

I notice nearly every one is telling how to produce section and extracted honey, and now I want to tell how we produce "chunk,"

or rather, bulk honey, and its advantages over the other kinds.

As to hives, we have the shallow, 10-frame supers from top to bottom, and the Hoffman frame. We place 9 frames in each, and use no excluders.

"Why, the queen will go up into the supers and lay," you will say. Well, what if she does? So many more workers; and farther along I'll explain why it makes no difference to us.

The reason we prefer to place only 9 frames in the 10-frame supers all the way through, is because we believe that in the brood-chamber the young bees are somewhat larger and better, the cells being deeper, and in the supers the combs being thicker are more easily uncapped for extracting, and the bulk honey looks so much more appetizing in both jars and other vessels. The 9 frames are spaced so as to have the same distance from either side as between each and every frame, and so when filled are all uniform in size. The old way (or at least old to me) causes that side of the frame next to the super on either side to have no honey at all. There you have the equal to one unused frame anyhow, and with twice the manipulation and the rest of the frames of honey so very thin. Then the 9 spaced frames have an even surface, while the 10 tight-fitting frames are decidedly bulged and difficult to uncup.

When taking off the honey we remove each and every frame separately, shake off all the bees and remove to the honey-room. All those with brood are carefully uncapped and extracted, and then returned to the super nearest the brood-chamber, and if there are not enough to fill it, frames with combs are added; another super with 6 or 7 frames with starters, and 1 or 2 (as the case may be) frames of combs for baits. We like to use all combs when we have an ample supply. Frames with old combs, or rather combs that have been appropriated by her ladyship, are used either for running for extracted honey in the future, or used to help build up a weak neighbor, or placed in a hive when catching swarms, or in preventing swarming.

Now we will return to those in the honey-room. There we have light, dark and indifferent frames of solid honey and some extracted. The very whitest combs are cut out in slabs just wide enough to be placed in Mason jars, which are then filled up with white extracted, sealed, washed and dried, and an attractive label placed upon them. The dark and indifferent but tender ones are cut out in convenient squares, generally somewhat larger than the ordinary section, and placed in buckets, cans, pails—anything that is scrupulously clean and has a lid to it. Then we have recourse to the extractor, and each vessel is filled nearly to the top, the lid is put on, the vessel washed over, dried, and labeled. The frames, which should have but very little honey in them, if they have been cut closely, are washed off in a tub of water and hung out to dry. In odd times they are placed, a few at a time, in a warm oven with the door open, and when warm are easily scraped, the groove carefully cleaned out with an 8-penny nail, and starters secured in them with melted wax on one or both sides. The nail is bent up at the point the least little bit. You then grasp the whole nail, place the point in the top corner of the groove, and pull it down to the end. The nail acts as a plow, throwing the old wax to one side.

The honey in the 60-pound cans is sold to our customers who buy in large quantities, and the smaller ones to those who buy in small quantities, so that the honey in the large cans is never disturbed except by the consumer, and as our smallest vessels are baking-powder cans, we can supply our very poorest customers without getting sticky or tearing up the combs in the larger ones.

We hardly ever sell to grocers, preferring to sell direct to consumers, unless we exchange in trade. Customers either pay in cash what the vessels cost us, or give us a counterpart in exchange. In selling to the consumer we get the full value of our honey, and build up a name that could not otherwise be obtained. Many of our customers wait until we can come around, and buy of us rather than buy of the groceryman, or come all the way to our place and buy it out of the honey-room or from the hives. There are so many different caprices, some like what they call "warm" honey, some just like to see it taken from the hives, and not a few, just for the sake of contrariness. But we like to please them all, regardless of inconvenience to us—a customer pleased is a customer forever.

The frames with very tough combs are extracted and placed in those new supers

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that I told you of, and used for baits, or reserved for further use as extracting combs. The uses for tough combs are legion. By this method there is no breaking down when extracting, plenty of extracted honey to fill up with, and all sells as extracted honey—10 cents a pound.

We have section supers, and these are put on when the flow is heavy, and the colony strong, when the bees enter them willingly. When the flow is light we get all the honey there is for them to get, whereas, if we had only sections, we would get half-filled or "thin" sections, and most likely none at all. The sections do bring a good price, of course, but then they are often hard to get, as they must be full; and then, there is no end of expense, trouble and worry with them, unless the flow is heavy enough to justify one.

The light weights and unfinished sections are cut out and placed in vessels with the bulk honey.

We have also a very few 8-frame hives, and in them we place the full 8, as they are not such a tight fit as the 10-frame super; and then, we like to have the little square sections, as some of our customers prefer them to the tall ones; the majority, though, prefer the tall ones (4x5). The thing is, to please our customers when we can possibly do so, without too much drawback to ourselves.

So you see that by running for bulk honey we are at all times ready to give them extracted or bulk comb, and, when conditions are right, section honey, too.

Some of our contemporaries will say that bulk honey is old-fashioned and slipshod, or slovenly; but, let me tell you, the old-fashioned way, in this instance, is more profitable and simple, and not slipshod or slovenly, because the comb is neatly cut (not torn, as in the old days), and the liquid honey is extracted, not strained through any old thing from brood-combs and "bee-bread" and what-not, with hands clean or otherwise.

The consumer gets a full pound every time, and for less money. The producer can care for more colonies with less help and less expense, and has a more certain crop, less loss of time, and far more profitable, in that one can sell 3 pounds of honey where only one could be sold before, when one runs for bulk honey. Just try this and advertise it as liberally as you would the sections, and see if it is not as I say.

One of the uses we have for tough combs is when catching swarms or making increase. To a very small swarm we give 3 combs in the center, and the rest frames with starters; the combs having pollen are very desirable. A medium swarm receives one comb of pollen, one of empty comb, and the rest of starters. When transferring, a strong colony gets starters only; a weak one gets empty combs, and combs with pollen, and sometimes with brood and honey. Increasing is conducted in the same manner.

By using the above method we have never lost a swarm or colony. Then when one places a full super of combs on top, don't you know one gets combs ready for extracting quickly.

Another use we have for tough combs is in keeping down swarming. We go to (say) hive No. 1, which has only one 10-frame shallow super, and remove 5 frames—2 from one side and 3 from the other. We then replace them with 2 frames with starters on each side, then divide the 4 frames of brood that were left, and place a frame of comb in the center. On top of them we place a reserve super, and in it one frame of starters, one of comb; then the 5 which were removed from below, one of comb, and one of starters in succession as stated, then the cover. As a rule, we find 2 of the 5 with honey, which are extracted and others put in their places. We will now say that hive No. 2 has 2 shallow supers for a brood-chamber. We manipulate in the same way, and use the extra 5 in making increase, or give them to some weak colony that is not likely to have the tendency to swarm. The frames, of course, are free of bees.

I notice some seem to think we might extract "while the brood is in all stages" (notice Gleauings for Dec. 15, 1909, page 762-3); but not so. If the brood is not all capped those frames are not extracted, but left in the hive or given to a weak colony. And then, is it necessary to sling so vigorously?

And now allow me to congratulate Ye Editor on that splendid index that accompanied the December issue. Thank you very much for it. As I have saved all my year's numbers it is a great convenience to us. Also how pretty the covers are now. I, for one, don't mind the rise in subscription price.

Eola, Tex., Jan. 7. (MRS. M. E. PRUITT.)

The advantage of having 9 frames in a 10-frame super for bulk honey needs

no argument; as to the brood-chamber, there may be differences of opinion. Are you sure that when more room is given the cells will be made any deeper, so long as the width remains the same? In the super there will be more honey with 9 frames than with 10 frames, but in the brood-chamber only 9-10 as much brood can be put in frames as in 10. But perhaps you find the advantage of having all combs interchangeable so as to be used either for the brood-chamber or the surplus apartment overbalances all disadvantages.

Most assuredly you are right as to extracting from frames containing unsealed brood. Whoever does that is taking a long step towards injuring the credit of extracted honey.



Conducted by J. L. BYER, Mount Joy, Ont.

Honey Crop Pretty Well Sold

In a recent issue I commented on the extraordinary demand for honey during the present season, and up to the time of this writing the demand still continues. Before writing these notes today, my first duty was to answer some letters asking for honey, and I know of only one place to direct them to, and for all I know the person referred to may not have any left. This is unusual for this time of the year, particularly as some of the inquiries come from dealers who usually stock up in the fall heavy enough for the season's trade. Such a condition certainly augurs well for the sale of the crop this year, should we be fortunate enough to secure one.

Snow Protecting Alsike Clover

The steady winter already alluded to with a nice covering of snow all over the clover since early in December, should insure good wintering of the alsike, the source of our main honey crop. I said *main* crop, but in so far as this immediate section is concerned, I might more truthfully say the *only* source of white honey, as, for some reason, white clover never amounts to anything around here.

What a Bee-Woman Can Do

Miss Wilson asked in her Department, in January, "Why can't we have more lady bee-keepers at our conventions?" A pertinent question, truly, when we consider how many *men* bee-keepers are indebted to their wives so much for whatever success they may have attained in their business. Of course this will hold true in any busi-

ness, but it seems to the writer that the fact is more apparent with bee-keepers than any other class, as the more I come in contact with members of the craft the more I am impressed with the fact that an unusual number have such efficient helpers in their own homes. Indeed, we might just as pertinently ask, Why do not more lady bee-keepers write up their experiences for the bee-papers, for it looks as if in most cases the ladies are the *silent partners*, as we so seldom hear from them. Perhaps it may be because of the thought that the men say so much that the women get disgusted, and think that by writing they would but aggravate the offence! At least I am afraid that may be the case in our house, for although my good wife has been asked by the Editor of this Journal to write occasionally for Miss Wilson's Department, she steadfastly refuses, and says that I say enough for *both* of us;—although she did not say so, yet I rather suspect she would willingly change the word "enough" for "too much."

Myrrh, Borax and Honey Mouth-Wash

Rub together $\frac{1}{2}$ ounce each of pulverized borax and extracted honey, add gradually one pint of pure alcohol and one-half ounce each of gum myrrh and red saunders wood. Let the whole stand in a wide-mouthed bottle for two weeks. Shake the bottle occasionally. Pass through filtering paper. Add a few drops of water and use as a mouth-wash.—MME. QUI VIVE, in the Chicago Record-Herald.

However, at the risk of getting my hair pulled, I am going to tell the readers of the American Bee Journal what one woman did last season in the way of wielding the uncapping-knife, even if it does mean the necessity of my apologizing for permitting her to have done so much heavy work.

To make a long story short, the woman in question, all by herself, uncapped, during the season of 1909, something over 30,000 pounds of honey; in fact, there was only one day that extracting was done that she was not present with us.

Now for the apology: Briefly stated, in the first place, she likes the work even if a steady day's uncapping does tire her a good deal; and, in the sec-

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ond place, it was impossible at the time to get helpers qualified to do the work, and she simply *insisted* on being present and having the work cleared up as fast as possible. However, if we should be blessed with a crop this coming season, I believe it will need more urgent excuses than the foregoing to allow me to let her do so much uncapping again, as I really believe the work is too heavy for any woman, when a good crop is to be handled. At the same time, I cannot but feel that the work of Mrs. Byer was, in the words of Mr. Scholl, "Not so bad for a woman;" and I wonder how many *men* did much better than that last season.

Divisible Style of Hives

Mr. Scholl's article on hives used by him for bulk comb honey, serves to arouse my interest again in the divisible style of hives. Not for the production of bulk-comb honey, though, but I see many points in their favor for the production of extracted honey, and, if starting all over again, I am not so sure but what I might adopt that style of hive entirely. As there is no likelihood of my having the privilege of starting all over again, there is not so much satisfaction in considering the question, so I will have to be content with the "contraptions" on hand for some time yet, at least.

Dr. Jones' Non-Swarming Method

I have been reading Dr. Jones' methods of preventing swarming, with feelings—well, I hardly know how to describe them. Dr. Jones is certainly a radical of the extreme type, ever to have thought of such a scheme. Really, I do not know whether to *try* the plan or not, as it seems so cruel and wasteful in the extreme. Of course, we cannot carry the sentimental too far in any business, but because of the repulsiveness, if for no other reason, I hardly think that the plan will be received with much enthusiasm.

This reminds me that there are, seemingly, restrictions as to just how far we may comment on the work, so perhaps I had better not commit myself too far in the matter, lest I repent for so doing.

Winter Everywhere—Bees All Right So Far

"Lots of rain, cold weather, *snow* and *ice* have made the outlook fine for a bountiful crop of honey." That is from Mr. Scholl, and he is talking about Texas, mind you—not of Canada, where we expect snow and ice every winter—in fact, would be disappointed if they failed to make their annual appearance. After this scribbler having had a longing to go to Texas or some other warm clime for the winter, such a declaration from the "man on the spot," certainly has a tendency to *cool off* such sentiments considerably. Judging from many reports to hand, the middle and south parts of the continent seem to be having a more than usually severe winter, while, on the contrary, we here in Ontario, are enjoying simply ideal winter weather. Of course, we have had cold weather—

without that feature the weather here would be unseasonable—but all things considered, so far the season has been as nearly perfect as we can look for in this part of the globe.

If I am correct, we have had but 6 days so far (Feb. 16) that the thermometer has reached below the zero point; while, on the other hand, there has been scarcely warm enough weather to be called a real thaw. A pleasing feature has been the excellent sleighing ever since the middle of December, with an almost total lack of drifted roads so common with us since the timber has been cut down.

How are the bees progressing during this steady cool weather? A little too early to make a statement yet, but from all outside appearances the bees outdoors seem to be wintering fine. I have been in very few cellars, but the

40 colonies I have in a neighbor's cellar are not nearly so quiet as was the case last winter. The cellar in question is a damp location, and while it has always been on the cool side for wintering bees, yet, with a furnace in part of the basement, the bees have always wintered well. This winter the furnace was not started till Jan. 15, and although the weather was milder than during the same period last season, yet the thermometer registered about 4 degrees lower this year than last, and that factor may be the one that is making the difference in the actions of the bees. However, they may be all right, and it will not be long any more before the worst will be known in the matter, so I will console myself for the present with the knowledge that there are only 40 of the colonies in the cellar, anyway.



By W. A. PRYAL, Station E, Oakland, Cal.

Air-Ships for Out-Apiaries

A few days ago it was my good fortune to see the celebrated Mons Paulhan, the wonderful French "bird-man," gracefully navigating in mid-air at great speed a few miles south of San Francisco. His bi-plane traveled more evenly and with less discomfort to the rider than does any means of conveyance used on land or water, and the byways of the atmosphere were unobstructed. It has occurred to me that when this means of travel will be within the reach of the average person, one of the first who should make use of it would be the bee-keeper. What a pleasure it would be for him to soar away to his distant apiary over the mountains. Distance, time and obstacles of mountain-passes would be obliterated; the tediousness of travel would be reduced to a minimum.

The possibilities of the aeroplane in bee-keeping is great; who will be the first apiarist to make use of one?

High Prices for Honey

This looks well on paper; tariff tinkering may have made it better for the producers of vile, filthy honey, but nowhere do I notice that really fine honey is selling any higher during these troublous times of soaring food-prices than heretofore. And, perhaps, it is well that the product of the bee-hive is one of the fixed commodities, for more of it will be sold and greater will the demand become at a fair, remunerative price than if it were to be sold at the boosters' figures.

One reason, I suppose, that the price of honey has not taken to flying-machine prices is that it has not fallen into the hands of the so-called trusts.

Some months ago I heard that a combination of men were going to unite all the large apiary interests in California, with a view of controlling the output of the bee-hives, and boost prices. It is likely that such a combination is not so easily brought about. For my part, I hope it will not be. The price of honey will largely have to be regulated by locality; the nearer such price is kept within the reach of the common people the better it is for the bee-keeper.

The Coming Season

Of course, it is far too early to predict that we are going to have a glorious honey-year. So far all indications point to a prosperous season. The rainfall has been bountiful; if the spring is propitious then will the coming crop be large. But we must remember that there is "many a slip," etc.

A Bee-Keeper's Utopia

From a gentleman in Bavaria, Germany, I received a letter asking about the conditions of bee-keeping in this State, that is so full of hopes and inspirations that I reproduce it here almost entire, as follows:

DEAR MR. PRYAL:—I intend to go to America in about two months with the view of buying a small apiary with all the fixtures and the land needed. Of course, the location ought to be good, but need not be excellent, and be able to stand considerable increase without reducing the surplus per colony very considerably.

In selecting an apiary, if I had the choice I would consider the climate just as important as the sources of nectar. Not too hot, not too much wind, and a great deal of sunshine. The location would have to be so that I would have no trouble with the bee-keepers in the neighborhood, as soon as I would increase the number of colonies. In a

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new location I want to be distant enough so as not to infringe on prior rights. The conditions in California are so different from here that I cannot precisely say what I want, nor do I know what might be had. Are apiaries depending only upon wild sage invariably very isolated—no roads to them, a great distance from habitations, etc.?

I would be greatly obliged to you if you would inform and advise me, so that I may succeed in finding a suitable location. I suppose that it is a difficult task, but that is no reason to desist from trying to find what I wish.

J. A. H.

As this correspondent surmises, he has propounded a difficult task, one that would take many pages of this journal to deal with in a satisfactory manner. However, I shall briefly answer a few of his questions, and would refer the gentleman to articles and letters from various correspondents of the American Bee Journal in past issues, especially to what was said of Mr. Vernon Townsend's apiary and experience on page 213 of 1910.

The California bee-keeper does not find it so necessary to be near a sage-field now as formerly; these latter ranges are mostly in far-away places, among the hills and mountains, and the majority are almost inaccessible; but that does not hinder the sturdy apiarist from reaching them any more than it does the bees from flying over the hills, or winging their way against strong wind currents through mountain passes to get to the nectar-fields. One can find the most delightful climate within 25 miles or so of the seacoast; further inland one will find pretty hot conditions at times, though after one becomes acclimated the heat is rarely oppressive, except for a few days at certain periods of the summer. It is in the hot valleys that one usually finds the large areas devoted to alfalfa growing; here ideal locations are often found for apiaries.

I would advise any one seeking a good location in California to follow the course pursued by Mr. Townsend; go over the ground carefully and note results. This might be done in less time, and at less expense, than Mr. T. found necessary; his experience, as noted in the article mentioned, should be of immense value to any one seeking a bee-range in California. However, I would not undertake to advise any one locating in the same county Mr. Townsend selected; there are lots of other places just as good, and, perhaps, better. What would suit one individual might not suit the next.

Where Ignorance is Bliss; or Bees vs. Flowers

Mr. Thomas Chantry writes me from Price, Utah, of the thorny road he has to travel as a bee-keeper where he has located 4 car-loads of colonies of bees. His home is in Los Angeles county, this State, but he wanted to gather the vast sweetness that was going to waste in one of the rich alfalfa districts of Utah. It really seems that "he ran up against" more ignorance than one could possibly suppose existed in these enlightened United States. Possibly that is because he went where the light of intelligence has hardly penetrated up to this year of grace.

It seems that the denizens of the alfalfa region have gotten it into their thought-foundries—for it appears use-

less to say "brains" in this case—that the visits of bees to the alfalfa bloom rob the plants of their vitality; that the alfalfa becomes poor and useless for the purpose it is intended, to-wit: fodder for stock. Besides, I suppose the seed does not form in the seed-vessels.

Any child in the lower grades of a Missouri public school would be able to prove to those Utah alfalfa-growers that they are wrong; that, on the contrary, the bee is of great benefit to the alfalfa, and consequently to the farmer. This fact was made patent in a splendid article prepared by Prof. Coburn, and printed in his book on "Alfalfa," an extract of which I used in the January issue of this Journal. I might quote other instances, but it seems unnecessary.

Mr. Chantry may secure some valuable literature, I believe, bearing on this very subject, by writing to the National Bee-Keepers' Association. By all means turn the light upon those Utah farmers; they will be the better for it.

Bees as Soil Fertilizers

It has long been known that bees are among the most wonderful factors in the cross-fertilization of flowers, but it has not been so well known that these same insects also fertilize the soil so that we often have larger and better flowers. Did you ever stop to consider what becomes of the millions and millions of bees that are produced in a large apiary.

Years come and go, and during every day of those years for many months thereof, the mother-bee industriously toils on producing bees, for what? In the end, to die like all animated things, and like the rest of God's creatures, to be resolved again into dust. And in this dissolution of the bee lies a great fertilizer, greater than at first thought we are apt to consider her. One has but to notice the wonderful growth of vegetation in front of the colonies in the apiary to know how great a soil-fertilizer dead bees are. I have not

studied this matter from the standpoint of a scientist, but simply as a casual observer. I feel that if it were tested in some of the Experiment Stations it would be found that the decaying carcass of a bee generates a germ (to put it that way) that is a great factor in soil-fertilization.

This much advanced, I drop the matter for others to try it out as they may see fit.

Acacia Mollissima—Mainly for Pollen

One of the glories of a California garden during the winter months is the beautiful Acacia mollissima. This is a tree from Australia or adjacent islands, I believe, and is thoroughly at home in this State. It is of a fairly rapid growth, of pleasing form and graceful, feathery foliage. The wood is hard, of splendid grain, and can be used for many purposes where a beau-



ACACIA.

tiful fine-grained wood that takes a splendid finish is required. I have seen specimens of these trees here over 60 feet high, and in the neighborhood of 2 feet in diameter. During January and February it is in blossom, and it is a common sight to see trees one mass of solid golden yellow—a sight that the eye fairly delights to feast upon. Its blossoms are eagerly sought after by the bees, mostly for pollen.



Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

Bulk-Comb Honey—A Recapitulation and a Word of Warning

That bulk-comb honey will be more extensively produced in other parts of the country outside of Texas becomes apparent more and more, as indicated by the many letters regarding it that have come to me since the first article on this subject was written last October in the American Bee Journal. The interest in the subject is participated in by more of our bee-keepers than was

first expected when the articles were begun, and it is very gratifying, indeed, to learn that so many are "taken" with the idea. While there has been an occasional one with an objection to this kind of honey-production, the great majority of the letters show a favor for a change from the production of the section-box honey to the very much more feasible, more economical, and more easy way of producing bulk-comb honey. More than this, dozens of letters show that there are numerous

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1.—ORIGINAL HOME APIARY AT HUNTER, TEX.



2.—FIRST OUT BEE-YARD.

bee-keepers who have already sold bulk-comb honey in a small way, in some way or other, finding that it will work, that there can be worked up a trade for it, that there will be a demand for such a product if it is only introduced, and that there will be a bigger profit in it for the producer. And the latter is one of the *biggest* things a person could wish for in bee-keeping.

Right in line with the above I need only refer our readers to the article by Mr. Greiner, on page 13 of the January American Bee Journal. His article represents practically what has been written me by many others, by bee-keepers who have had the same kind of experience, and who favor bulk-comb honey. I should like to ask the reader to look up Mr. Greiner's article and read it over carefully, for he covers many good points in it. It will be noted how it would be possible for him easily to work up his trade in bulk-comb honey already begun. In fact, he already has the trade, and all he will have to do is to furnish the bulk-comb honey. There are thousands of others who can do exactly the same thing. And it will mean dollars and cents to them. It will help them to sell honey where they are not selling section honey today. It will help the bee-keepers all over the country to dispose of a far greater amount of honey, and a great deal of it right at home, thus keeping great quantities away from the glutted market. And is there any doubt about this not helping to increase the price of honey? Will it not help to lessen the bee-keeper's wail about the honey market, and the low prices for his honey? Will the production of

comb honey—a honey that will be used by more of the masses, as it is in the reach of those who cannot afford section honey, and those who do not care for extracted honey—not result in a more even and wider distribution of honey, instead of it going in train-loads to markets that are only glutted because of this action on the part of the bee-keeper himself? We know this is so.

Right in this connection I wish to call the attention of the reader to a few points that will have to be considered in this matter of bulk-comb honey production in the North, and other places where it will be a new product, if its introduction is to be attempted.

The first of these is, not to go too fast. Remember that it may be a new thing to your customers; that they may not like such honey right at the start; and that a good deal of education *may* be necessary (?) before the people in your market will take to it readily. I have put a question mark above for the reason that here in Texas it has never been necessary for its producers to spend much effort toward educating the consumers for bulk-comb honey. They "took to it" right from the start; in fact, they took to buying it much more readily than did the most of the bee-keepers to producing it. In the latter respect, the bee-keepers of Texas of that time resembled the bee-keepers of the North at the present time. While some of them adopted the plan immediately, and profited by it, others lagged behind for a while, to see if it would work, and then they wondered afterward why they did not fall in line right away. But since there is a difference in localities, it will be well to give the

matter a thorough trial in a small way at first, and then increase its production as the market takes to it.

Secondly, it will be well to remember that some education on the part of the bee-keeper himself is required in the new method, since it takes experience and knowledge on the part of the producer in producing a good article, putting it up attractively; and, lastly, but not least by any means, introducing it to his customers in the right way.

Summing up the whole, therefore, do not rush into this matter, but take plenty of time. Go slowly, and work into it if it will work in your locality, and then, as your increase in demand, and your increase in experience, grow, your business will naturally enough grow with them. The while that you are trying to introduce bulk-comb honey in a small way, keep right on producing the other kinds now produced by you, and if the new venture should fail, your loss will be very slight; and if the new way is successful, the change can be made gradually until an entire change seems advisable.

My succeeding articles will deal with each feature in rotation, so that I hope to help all who wish to try it this season. There is a great future for bulk-comb honey, but the change may be a gradual one for a year or two, to the advantage of the bee-keepers, perhaps.

Scholl Apiaries—Where Bulk-Comb Honey is Produced Exclusively

To give the readers an idea in what a great variety of looking apiaries bulk-comb honey production can be carried



3.—OUT BEE-YARD—MESQUITE TREE SHADE.



12.—A DEEP-WATER APIARY IN TEXAS.

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5.—ONE OF THE BEST APIARIES—AVERAGE 4 SUPERS.



6.—ANOTHER OF THE BEST APIARIES.

on, the pictures of a dozen of the writer's apiaries will show. These are in as many different kinds of locations. There are now another dozen besides these, as the pictures show the apiaries of several years ago. They will number 26 the coming summer. Besides this, the apiaries look entirely different now from those in the pictures shown. There are no more weeds, and grass, and untrimmed trees. The hives have been overhauled and re-arranged. The bees, even, have been receiving an overhauling, in that the queens are being looked after and replaced wherever this is best, so that the stock itself is better than before. All this is done for one reason: To make more bulk-comb-honey production in my extensive apiaries the best, most economical, cheapest, and most profitable.

While some of the apiaries are located within a few miles of New Braunfels, Tex.—our operating center—others are scattered around many miles, so that some of them are 20 miles and more from home. Then there is a separate "string of apiaries" nearly 200 miles from here, in the rich valleys of the Brazos River, on the great cotton plantations, where cotton bulk-comb honey is produced exclusively. All of these are managed by one fellow (the writer), producing every year car-loads of bulk-comb honey. Could I do this with section? No, I could not, for I have, at one time, produced such on a small scale.

Here is a short description of the apiaries shown:

Fig. 1 shows my original home apiary at Hunter, Tex., where I grew up, and started bee-keeping nearly 20 years

ago. The shade-trees are evergreen cedars or junipers, planted by myself. When still at home, the yard was kept as clean as a floor, but grass grew up during my absence later. The shade is not desirable; too dense. Here *only two kinds of honey were produced* for a number of years—*section honey and extracted*. And here, too, is where I learned to change to bulk-comb honey, in a jiffy, after I learned of it; in less than two seasons changing to bulk-comb honey production exclusively. This was 15 years ago.

In Fig. 2 is shown the first out yard 6 miles south, and two more (Figs. 3 and 4) still several miles further south, where hundreds of tons of bulk-comb honey have been produced since their establishment. Mesquite tree shade here is an ideal one for an apiary. It is not dense, gives a partial shade, and as it comes into leaf late in the spring, and sheds them early, the sun plays with the hives of bees both early and late in the day. Here the divisible brood-chamber hive, described in one of my articles, prevails, except in Fig. 4. This yard is now changed to that kind of hive, as are nearly all the yards now. By looking closely the shallow bulk-comb-honey supers will be seen on the hives. Fig. 4 shows full-depth bodies with extracting-combs nearly filled with honey, and the bulk-comb-honey super given between it and the brood-chamber. This plan is used on all of our colonies, but shallow extracting supers are used, which are exactly the same as the bulk-comb supers. It is a method that has helped us to encourage brood-rearing at the same time, to keep down swarming and get

more honey, and will be described fully later.

The best two apiaries are in Figs. 5 and 6. Their average a year ago was a little over 180 pounds of bulk-comb honey per colony, and 160 pounds the past year. Fig. 5 shows an average of 4 supers on all around in the early summer, and there were several with eight 30-pound supers on at the end of the season. One of these "sentinels," as I call them, was shown last month. A number of the colonies in them were produced in the two places nearest home, shown in Figs. 7 and 8, where the most of our increase is made during the season, and then moved out to yards where needed, or new ones established. Here all kinds of hives are brought into play, as we make it a practice to *make use of everything all the time*, if we possibly can, as it is just so much money lost if left lying around as idle capital. One of the secrets of success is, in my opinion, the constant turning over of the dollar that we have already invested, and "making it make more dollars" for us. We do this in these yards, as well as in other things.

The last four pictures show some yards nearly 200 miles away. Fig. 9 was just located when the picture was taken, and has no supers on as yet; while Fig. 10 has already received its first round. The other two, 11 and 12, "have legs." They are built crane-style, so that we can wade around in the water when we have those terrible—yes, "tearable"—floods in those river valleys. They have been in a half-dozen floods, sometimes with the water right up to the entrances of the hives.



7.—WHERE MOST OF THE INCREASE IS MADE.



8.—WHERE MOST OF THE INCREASE IS MADE.

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9.—JUST LOCATED WHEN PICTURE WAS TAKEN.

But no matter what they have had to go through, the production of bulk-comb honey in these apiaries has made it a profitable venture, as it has been in all of our apiaries.

Moving Bees With Open Hive-Entrances

I have clipped the following from the Dallas (Texas) Semi-Weekly News, and as it comes from one of our most experienced and extensive bee-keepers, I give it place here. I have always discouraged moving without closing the hives securely, and do this now, for the inexperienced, at least. But a move of 600 colonies in summer, as stated here, shows that under certain conditions it can be done successfully, at least, by experienced bee-keepers:

HOW TO MOVE BEES.

How we moved 600 colonies of bees in summer and without closing the hives:

The bees were in three apiaries of about 200 colonies each, and three wagons with high sideboards were used in moving them. About 36 hives were put in each wagon.

We prepared the hives for moving by working them back to one-story hives. The brood and honey were placed in the lower story, and the top story, sometimes with honey in it, was set in a stack to be cleaned out by the bees. If there are many combs of honey they could of course be extracted or kept for feeding. Covers were then nailed, bottoms stapled on, and they were ready.

About sundown and a moonlight night was the time selected for moving. One man smoked each hive just before loading. The team was unhitched while loading. After wagons were loaded a thin cloth was spread over the wagon, and stray-chains unhooked to facilitate unhitching in case of accident. Arriving at the destination the horses were taken out, and we retired for the night.

At daybreak each wagon was well smoked and then unloaded. A. H. KNOLLE.
Sandia, Tex.



10.—RECEIVED ITS FIST ROUND OF SUPERS.

Fall Crop of Cotton as a Honey Plant

Last season (1908) was the best I have ever seen; this season was the worst. Up to Aug. 20, we had hardly rain sufficient to lay the dust. All crops, and even the weeds, failed to grow; but cotton will stand until frost; and if it gets rain in the fall it will grow fast. I believe the fall bloom will yield more nectar than it does at its usual blooming time, which is from May to July, as the long, hot days seem to dry up the secretions, and, as a general thing, there is an abundance of other bloom during those months in this locality, and it would be difficult to say that you had any real cotton honey.

But there is no mistake about it in the fall, for there is absolutely nothing else to work on. I have watched the bees at work on it for hours. During the last few days they do not seem to care much about the inside of the bloom, but prefer the nectar-glands at the base of the corolla, and outside also on the buds or "squares."—D. P. HUNT, in Gleanings.

Shallow Hives

The following is a welcome letter:

Dear Sir:—I frequently notice that you advocate shallow hives, and also your plea for shallow frames—page 156 (1909). Well, I hope that you will have better success with teaching others than I have had so far. I have used the shallow hives for nearly 12 years (on recommendation of Mr. Stachelhausen, now deceased), and in spite of my securing much larger crops as heretofore, I cannot convince even my neighboring bee-keepers that shallow hives are "the thing!" What a convenience to have but one kind of hive and super for comb or extracted honey! Most California bee-keepers have about 2 or 3 different styles in their apiaries, and ever so many styles of supers.

I notice that the A. I. Root Company are advocating the shallow hives more and more, and I think it will be the coming hive all right.

I wish to thank you for your valuable articles in the bee-papers. I always read them with special interest. M. R. KUEHNE.
Pomona, Calif.

Bee Keeping in Oklahoma

The young State of Oklahoma has a good word spoken of it as a bee-keeping State by two writers in Gleanings. W. F. Roller says:

Conditions here are ideal for outdoor wintering. The hives are seldom moved from their summer stands, and double-walled hives and packing are not necessary. The severe cold spells of weather seldom last longer than two or three days. In nearly every week there are one or more days warm enough for the bees to take a good flight. These frequent flights enable them to stay contentedly in the hives, flying out only on days warm enough for them to get back without danger of getting chilled and lost.

The critical period with us is the spring season, from early in March to about the middle of May. During the larger portion of this time the weather is cool, the winds are high, and though the flowers furnish only a small amount of nectar the bees seem unable to get what little there is. Brood-rearing continues throughout this period, and unless there is an abundance of winter stores left over or ample feeding resorted to, many colonies dwindle down to a mere nucleus or die from actual starvation.

The summers are long and unusually favorable for the gathering of nectar. With three or four successive crops of alfalfa and many other nectar-bearing flowers, there is more or less of a light, continuous honey-flow from May to October. Foul brood and other bee-diseases are almost unknown here.

Meat and Honey

Wesley Foster says this, in Gleanings in Bee-Culture:

I was never especially impressed with the combination of milk and honey, but good thick extracted honey of mild flavor spread over cold meat makes a morsel that is edible in the highest degree. It sweetens the meat without making one aware that it is honey that sweetens. Try it and see if I am wrong on the taste.



11.—"BAPTIST" APIARY—UP ON LEGS.



12.—OUT BEE-YARD—FULL-DEPTH HIVE-BODIES.

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Send Questions either to the office of the American Bee Journal or to
DR. C. C. MILLER, Marengo, Ill.
Dr. Miller does not answer Questions by mail.

National Bee-Keepers' Association

What is the use and advantage of belonging to the National Bee-Keepers' Association?
WEST VIRGINIA.

ANSWER.—The thing that first started beekeepers to uniting together was the fact that a Wisconsin bee-keeper, Mr. Freeborn, was prosecuted by a troublesome neighbor who kept sheep, and who charged that Mr. Freeborn's bees drove the sheep and injured the pasture. The expenses of the lawsuit were pretty heavy for one man to stand, and all beekeepers were more or less interested, for if the suit went against Mr. Freeborn, and he had to pay damages, beekeepers all over might be mulcted in the same way. So a number of us chipped in to help Mr. Freeborn, and from that grew a permanent organization, which with some changes of name, has continued ever since.

Prior to that time, in a good many instances beekeepers had been obliged to give up beekeeping or else to move their bees at the whim of some troublesome neighbor, but after this banding together they began to stand up for their rights, and the Association always stands ready to aid its members if trouble starts. In this way it stands as a sort of insurance company, for none of us knows what day he may get into trouble and need help.

It has also influenced public opinion by its deliverances, and by some effective advertising. If beekeepers were all as wise as they should be, and all of them unite with the Association, there is no telling how much good might be done. Some think prices could be influenced to such an extent that the annual cost of membership would come back to the pockets of each member many times over.

The annual report that each member gets free of charge is valuable.

If you are awake to your best interests you will send a dollar to the General Manager, N. E. France, Platteville, Wis., and he will at once enroll you as a member; or send it to the office of the American Bee Journal if more convenient.

Moths in Hives—Bees Eating Holes in Combs

1. How can I best prevent moths from getting into my hives. Last summer they destroyed 4 for me—literally destroyed them. I laid it mostly to moths being more numerous than usual, there being much wet weather, and it seems there are many more in wet weather than in dry weather. In two days and nights last summer they destroyed one colony. I examined each of the hives every 2 or 3 days while so wet, after I saw that it was necessary to do it.

2. What makes one of my colonies eat holes in its comb? It is not that the bees have nothing to eat, for they have plenty, there being about half of the comb full of honey. They seem thrifty; that is, they seem healthy, and are strong. They have eaten holes through portions of the combs, and eaten the edges and corners off of other portions. I first thought that mice had made a nest with them, but on examination I do not find it so.

KANSAS.

ANSWERS.—1. The moths are not so bad as you think they are. Wherever they are bad it's a pretty safe guess that the beekeeper himself has first been pretty bad in allowing more or less weak colonies in his yard. You went into each hive every 2 or 3 days, and doubtless you destroyed all the bee-moth larvae, or wax-worms, that were large enough to be readily seen. You did well, and that's about all you can do directly to get rid of them. The indirect means are the most im-

portant. Don't allow pieces of comb or hives containing them to be standing about as breeding-places for the pests. Most important of all is to keep all colonies strong. Italians are almost moth-proof, ever so much better than blacks. Even a rather weak colony of Italians will keep the moth at bay. If you want to encourage the moths, leave a very weak colony of black bees in your yard. Then when their combs are riddled with the work of the moth, give them to a strong Italian colony, and see how soon they will be cleaned out.

2. I don't know without seeing. It may be that the bees have been digging out worms. It may be that the bees have been digging down the comb at a part where it is not in use, to be added to some part that they are using. Sometimes, indeed very often, it looks as if bees dug down their comb through sheer mischief. Especially if foundation is given at a time when no honey is coming in, you may count on their gnawing it more or less.

Best Clover for Bees—Kind of Brood Foundation—Best Bees

1. What kind of clover is the best for bees?
2. What kind of brood foundation should I use?
3. I am sending a few bees. What kind are they?
4. What kind of bees are the best?

IOWA.

ANSWERS.—1. In Iowa, probably, all things considered, no clover is more valuable than the common white clover. Very likely you have that without any sowing. If you want to sow any besides, try sweet clover, both the white and yellow variety. It blooms later than white clover.

2. Perhaps "medium brood" will be as good as any for you; although "light brood" might do if well supported by wires or splints.

3. As nearly as I can make out from their mashed condition, I should think them hybrids, or blacks with some admixture of Italian blood.

4. You can probably do no better than to have Italians.

Moth Troubles—Italianizing

1. I have 6 hives of bees, the common black. The bee-moth destroyed 2 colonies. I did not know anything about the moth till one day I saw some dirt on the alighting-board, and looked in to see what was going on, and I discovered the moth. Everything was solid webbed in moths of all sizes. There is a woman about a mile away who keeps bees, so I went to her to see what to do. She said, "Burn sulphur, and set the hive over it; melt up the comb, and clean out the hive." I think I ought to have done it, as the moths, I believe, have gone into the other hives. The frames are all fastened together. They have never been handled like a regular bee-man would handle them. What can I do if the bees should be alive in the spring, to save what I have of the 4 colonies? Is there any way to keep the moth away by traps or any other device? My bees did not store any honey last year; possibly they have no queen, or a poor one.

2. If I bought an Italian nucleus with a queen, would they Italianize the blacks, or would the blacks "black" them? I have "Forty Years Among the Bees," but I have not found, as yet, what to do with the moth.

NEW JERSEY.

ANSWERS.—1. See reply to Kansas.

2. If you get a nucleus with an Italian queen, and set it in a yard of black bees,

and do nothing more than that, the nucleus, or the colony that grows from it, will continue to be Italian so long as that queen lives. When a young queen takes her place, the young queen will most likely meet a black drone, and her worker-progeny will be what are called "hybrids." At the same time some of the young queens in the black colonies may be fertilized by Italian drones, but the black blood will predominate largely. If you rear young queens from the Italian, introducing them into other colonies, you may soon have Italian blood predominating.

Moths in Bee-House—Trap for Swarming

I have 2 colonies of bees now. I lost 2 with moths.

1. I am going to place them in a building when taken from the cellar. Will moths bother them there?

2. As I have not time to be around at swarming time, I am going to put on the queen and drone trap. Will that be right?

MINNESOTA.

ANSWERS.—1. The moths will trouble as much in a building as out of it. Read carefully the answer to "Kansas."

2. It will be all right if you give the proper attention afterward. But merely putting on a trap will not answer. The queen will be caught in it, and if you leave her there there will be a young queen in the hive in a week or so, and when she tries to fly out to be fertilized she will be caught in the trap, and then you will have a queenless colony. You will have to keep watch, and when the queen is caught in the trap make an artificial swarm, or dispose matters some other way.

Non-Swarming—Getting Increase

1. In the American Bee Journal for May, page 108, it gives an easy way to stop swarming, by putting the new swarm on the old stand, and the old swarm beside it; later move the old swarm about to feet away. Will they store just as much honey, or more, if this is done? or would they do better if left to swarm about 2 or 3 times?

2. In the July issue, page 220, it shows an easy way to increase. Do you think this is just as good as natural swarming? Would you increase that way?

IOWA.

ANSWERS.—1. In your locality I think you would always get more honey by the plan mentioned than by allowing the bees to swarm at their own will. In a season not above the average, if a colony should swarm 2 or 3 times you would be likely to get no honey. By following the plan mentioned you might get a fair crop from the swarm.

2. The plan is given, not as a very good one, but as a very easy one. It is not as good as natural swarming, for you would not have as good queens, if there were no other objection. But if one could not be on hand to hive natural swarms, and one wanted to increase the easiest way, it might be used. No, I wouldn't use it myself. I would rather take a little more trouble and have a better way.

In "Forty Years Among the Bees" you will find some of the ways I use that are not so easy, but a good deal better.

Supers Partly Filled With Honey

1. I have about 20 supers about half filled with honey from last year. What can I do with them? I thought when I put them away they were all right to put on in the spring, but from studying bee-papers, that does not seem the thing to do.

2. What if I should put them on early, say as soon as bees are taken out of the cellar?

IOWA.

ANSWERS.—1. I am in the dark as to whether section supers or extracting supers are meant. It makes a difference. In either case, the probability is that the honey in the supers is candied, and candied honey cannot be suffered in sections, although it might not be objected to in extracted honey. The honey should have been emptied out last fall by the bees, but it does no good to tell you that now. I'm only telling you for the future. Likely there are sections in the supers. Set 4 or 5 supers in a pile (not over any colony), and allow an entrance only large enough for a single bee at a time. Or you may put 8 or 10 in a pile, with a small entrance at the top and another at the bottom. If you allow a large entrance, the bees will tear the combs to pieces. Leave them till the bees have cleaned them out and have practically stopped working on them. If you allow a large entrance, the bees will tear the

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combs to pieces. Leave them till the bees have cleaned them out and have practically stopped working on them. If you take them away sooner, it may start robbing if they are anywhere near the hives. They will not be so nice as fresh sections, or as if cleaned out in the fall, before candied, but they may do. Extracting combs may be cleaned out the same way, only you need not be so particular about small entrances unless the combs are new and tender.

2. Extracting combs may work all right that way; but there is too much danger that sections would not all be emptied.

Untested or Tested Queens.

Which is more profitable, to purchase untested queens at \$1.00 each in June, or to get a tested queen for about \$3.00 and increase from her stock?

ILLINOIS.

ANSWER.—It depends something on the reliability of the testing, and upon your hurry for increase. If you can be sure the tested queen is superior, and are not in a hurry about increasing, take her. If the testing means that she is of the same stock as the 3 untested, only that her worker progeny shows she has mated all right, then take the three.

Comb-Foundation for Wired Frames.

Is it necessary to put in full sheets of foundation in wired Hoffman frames, or can I put in just half a sheet, or a third of a sheet (cut the other way) on each side, and a starter for the center? Will the bees finish up these frames, and which way is the best?

SAGINAW.

ANSWER.—It is not absolutely necessary to put in full sheets. The bees will build out the combs if foundation is put in either way you mention, or even with a starter only half an inch deep. But I never felt I could afford to put in less than full sheets, for otherwise entirely too such drone-comb is likely to be built, and in the long run that is expensive business.

Granulated Honey in Hives in Winter—Why Did Bees Die?

1. My bees have had one flight since December 8, and that was January 19th. I examined them yesterday (Jan. 20), and found the combs that were not capped, full of granulated honey. What is the cause?

2. I further found 5 colonies dead with plenty of honey in the hives, the bees being all bunched in a pile and stuck fast in the combs. What is the cause?

KENTUCKY.

ANSWERS.—1. The character of the honey may be to blame. It may have been gathered late, not ripened, and so left unsealed, when it would granulate. Some kinds of honey are worse than others in this respect. Then there may have been honey-dew.

2. Again, it may be the character of the honey, or honey-dew. That's the most likely guess; although sometimes bees starve with plenty in the hive, the cluster being at one side of the hive and the honey in the other, the honey in the cluster being used up and the weather too cold for the bees to leave the cluster to reach the honey in the combs.

Management for Much Honey and Little Increase.

I have 200 colonies of bees in 10-frame hives with movable combs. I run for both comb and extracted honey, using the strongest colonies for comb honey early in the season, and finishing up the season with extracted honey. I want to get all the honey I can and increase as little as I possibly can, next season. I use queen-excluders on all extracting hives. When queen-cells are started containing eggs or larvæ, I thought of killing the old queen, and in 8 days destroy all queen-cells but one, and give plenty of room for storing.

1. Will this young queen occupy the hive the balance of the season without swarming?

2. Is there danger of clogging the brood-nest with honey as the bees hatch out, so that the young queen will not have room?

3. Will the bees store as well after the old queen is removed?

4. Do you approve of this plan?

MINNESOTA.

ANSWERS.—1. I think there would be no swarming before the next season.

2. The likelihood is that as fast as cells are left empty by emerging young bees they will be filled with honey. But when the young queen gets to laying they will be emptied for her.

3. I'm not sure whether they will from the time the old queen is removed until the young queen hatches, but as soon as the latter is out of her cell the bees will hustle.

4. That's the hardest of your questions. If you can be sure in every case that the young queen will get to laying, then I approve the plan emphatically. I think some might have trouble with swarms leaving when the young queens take their wedding-flight. You might not have that trouble. Of course, you need not be told that in killing queen-cells 8 days after removing the queen you might be too late if the larvæ were too far advanced. There is also the possibility that the only cell left might prove to contain a dead larva. Not much danger, but such a thing has happened. On the whole, you will probably do well to try the plan. For the extracting colonies you might try the Demaree plan. When the season has begun, but before swarming, put all the brood over the excluder, leaving the queen below, with empty combs or foundation.

Method of Swarm Prevention.

Did you follow the same method of swarm prevention in 1908 as you describe in your book? If any modifications, kindly state them. Can this plan be successfully carried out where a person has clover, buckwheat, and a fall flow? I run for comb honey.

INDIANA.

ANSWER.—In 1908, the plan given on page 186 of "Forty Years Among the Bees" was modified in this way: Instead of putting several frames of foundation in the lower story, a comb containing the least amount of brood was left, or else from another colony a frame was obtained which contained very little brood and was mostly filled with pollen and honey. This frame was put in the lower story at one side, and next to it were put 2 empty frames—not even the sign of a starter in them. That was the only variation in the treatment. The object was to make sure the queen would not desert, for she would not leave this established comb as she might the empty foundation. The empty frames without any starter were to discourage building as much as possible.

In some cases a colony that showed advanced preparations for swarming had its queen killed or removed, and 10 days later, all cells being destroyed, the colony received a young queen that had been laying but a short time.

The plan here mentioned is, I think, as safe against swarming as any that leaves the old queen with the colony; the second plan as safe as any I know of.

Either plan works here where there is clover and a fall flow, although there is no buckwheat. I should not feel afraid, however, that a buckwheat crop would make any trouble.

Wants More Dark Honey—Disinfecting Hive-Tool.

1. I got honey from white clover, raspberry, sumach, etc., beginning about June 1, and lasting until about July 15. This honey is light and nice-looking. Then about August 1, the buckwheat begins to yield. Sometimes there is not much of a break between the light honey-flow and buckwheat flow. I always leave a super on during the slack time so bees do not forget that there is an upstairs to the hive, but the best I can do, I have some sections that don't get finished until the buckwheat opens, and then they are finished out with buckwheat, making two colors of honey in the same section, that does not look well, or sell well. In fact, everybody wants dark or buckwheat honey, and I have very few calls for light honey, and none at all for mixed. I run mostly for comb honey and sell it mostly by peddling with a wagon. I wish you would describe a plan by which I could get the bees to keep more of the light honey and give me lots of buckwheat honey, or some way to get nearly or quite all buckwheat instead of so much light and mixed honey. If I can not do this I would like, at least, to avoid the sections of two colors, if possible. If I could get some light honey mixed in with the dark gradually, so as not to give two colors, it might sell fairly well. However, I don't know.

2. If I get a hive-tool or anything used in bee-work in contact with foul brood, how can I disinfect it so that I am safe in using it to uncap healthy brood, or anything I might want to do with it? As you've had a good time fighting yours, I'll try to do likewise. It's European.

PENNSYLVANIA.

ANSWERS.—I'm afraid I can't help you very much. To turn the early honey into the buckwheat crop is beyond me, unless in the form of extracted honey. You could extract some of the early honey, or keep it in combs. After the buckwheat harvest closes, you could extract from the brood combs all the honey, which would be chiefly buckwheat, or if some white honey was present it would merely lighten the buckwheat a little. Then you could supply the bees for winter with the white honey you had saved. I doubt if it would pay.

But the thing you most dislike, the spotted sections, white honey in the center and filled with buckwheat, you certainly can avoid. You can take off all sections at the close of the white flow, let the bees rob out those partly filled and put them on again when the buckwheat flow begins. You say you leave a super on during the slack time "so bees do not forget that there is an upstairs to the hive." Well, the bees don't need anything of the kind to keep them from forgetting. I've tried it and I know. When the buckwheat flow begins they will start on those sections that have been robbed out just as promptly as if they had staid on the hive all the time.

Come to think of it, I don't see why you couldn't swap your white sections with some bee-keeper who has buckwheat but prefers white. Most bee-keepers prefer the white. A small advertisement in a bee-paper ought to find some one with whom you could make a profitable trade.

Bee-Keeping as a Business.

1. Would you advise a young man to follow bee-keeping as a profession? I have 23 colonies at present, and like it very much.

2. What preparation would you advise? I have "A B C of Bee-Culture," and take two bee-papers. Would you advise working with an expert apiarist for a time?

3. I am 19 years old and have completed a preparatory course for college. Do you know of an agricultural college which has a course in bee-keeping connected with it? We have a first-class State Agricultural College, but it has no course in bee-keeping.

NEW YORK.

ANSWERS.—1. I would hardly advise any one to enter upon bee-keeping as a life-work until he has become quite thoroughly acquainted with the business. He will then be able to decide the question for himself more satisfactorily than can any one else for him.

2. You seem to have a pretty good idea of what is to be done. Study and practise are the things needed, adding more books, attending conventions, and if you can work under the superintendence of a good bee-keeper, all the better.

3. Agricultural colleges with courses in bee-keeping are scarce, and I am sorry to say I can not now give a list of them. There was a fine course in Michigan, but I think it has gone into a decline since Prof. Cook left there and went to California, where I think he has started one. One has been established, I think, in the Ontario Agricultural College, at Guelph, Canada.

A Hive Question—Honey without Separators.

1. I would like to have your opinion of the hive I will describe. It is made of white pine lumber, 21 inches by 2 feet 2 inches. This is merely an outside shell. Inside is placed a brood-chamber with 10 frames. This allows space of about 4 inches all around the brood-chamber. As the brood-chamber is not deep the hive looks rather queer—a large affair with a small box inside is what it looks like. The sections during the summer are placed upon the brood-chamber and so tiered up. This is wholly a home-made hive, which I purchased of the wife of a successful bee-keeper in our town, after his death. I regret to say that I never spoke with him so I can not say whether the hive is valuable or not. On account of his death the bees were sold cheap, and I ventured to buy 3 colonies which was my start in the bee-business. I now have 7 colonies all lived in the same kind of hives,

(Continued on page 97.)

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Disinfection of Foul-Broody Hives

BY D. M. MACDONALD.

The question, instead of being a negligible quantity, is one of primary importance. Before entering on the subject, let me make two short quotations showing the anomalous position the question of nomenclature has fallen into in Canada and the United States. You, as with us on this side, recognize a mild and a virulent type of foul brood. Which is which? Take this description of the so-called American type:

"You might as well expect to cure American foul brood by throwing a cup of cold water in the grass in front of your hives as to expect to cure it by requeening, as I recommend for European foul brood."—ALEXANDER.

Now place alongside it this contradictory statement:

"It seems to be of a particularly virulent type, and, unlike 'American' foul brood, it will go all through your apiary in a few weeks. With it we are almost entirely helpless."—BYER.

Mr. Alexander distinctly sets the American foul brood down as the virulent type; Mr. Byer emphatically takes the opposite side and describes this Black or European foul brood as of "a particularly virulent type." I don't recognize the names as appropriate, but I will waive that point at present. The principal consideration is that we have a disease insidious in its working; like the pestilence it walketh in darkness, and virulent in its distinctive power.

Now, Mr. McEvoy and his supporters, backed up by some of your Inspectors, and abetted by the editor of the Bee-Keepers' Review, declare that they work cures without disinfecting, and hence they reason illogically, because from a wrong premise, that disinfection is unnecessary. Get the disease, even the virulent type, at a certain stage, and you have to deal with germs only. A shaking and a renewal of the works may rid the hive of the seeds of contagion, particularly if the bees are made first to consume the infected honey they carried away in their sacs. Delay treatment, however, until these germs assume the spore stage, and complications at once arise. The vitality of a spore is almost incredible, and its reproductive powers almost fabulous. This once recognized, it will become apparent that spores left in or about the hive after lying dormant for a time, can easily be resuscitated when the cultural medium appears. We find in one type of *Bacillus alvei*, that this arises time and again. Hence our insistence on disinfection. We do not entirely rely on one, or even two, shakes (and I know many in America do not place

implicit faith on even the latter), because we know that frequently the seeds of future disease are left to blossom into vile fruit.

It follows, therefore, that a little regard to sanitation will not only scotch the snake, but kill it. What bee-keeper, if he is at heart of the good and true type, would grudge a little toil if he is assured it is for his own and the bees' well-being. This is all we plead for, and our plea is, I think, a reasonable one. So we scorch the interior of a dirty hive, or otherwise disinfect it.

(In parenthesis might I say here that the absurd insinuation thrown by Editor Hurley at Editor Root, is wholly illogical. This process does not lessen the number of hives in an apiary, and so does not gain for his firm a single cent. Mr. Hurley should therefore withdraw from his untenable position.)

Another feature which should weigh with editors is the fact that their newspapers are not written for experts, inspectors, or even the giant bee-farmer, but for the average bee-keeper. It follows that what Messrs. Hutchinson, France, McEvoy, etc., might be trusted to do cannot be safely entrusted to the man in the street, and as a logical sequence editors should sink their own personal beliefs on a point over which so much hangs. You and the editor of the Review know that Tom, Dick, and Harry, all estimable men and keen bee-keepers, cannot be entrusted to perform expert work, such as he and you could do. Leave one spore and there lie the seeds of contagion; leave one foul-broody hive amongst a thousand, and you have still the disease.

So I plead for a thorough cleansing and disinfecting of every foul-broody hive. A spore is an almost infinitesimal atom, requiring a microscope for its detection, even by an expert. Who, then, can say where it may be present? My own idea is that even where it is presumably absent, the bee-keeper should act as if it may be present, and do his utmost to rid the hive of its presence. Hence I say, emphatically, DISINFECT!

Ballindalloch, Scotland.

Spring Stimulative Feeding.

BY G. A. BARBISCH.

In 1908 I practiced stimulative feeding on 8 colonies, but the results were not as expected. The colonies were not larger, nor did they swarm earlier than other years. The past season I experimented again. Out of 18 colonies that wintered perfectly I again stimulated 9 colonies, and as they had a good deal more honey than they

needed—in fact, there was no room for the queen to lay eggs, having eaten but very little honey during their 5 months' confinement in the cellar—I extracted about 100 pounds, according to the Alexander plan. Nine colonies were left alone entirely. Now those latter colonies that were not stimulated cast large swarms first, and stored more surplus honey than those that were stimulated, so after this no more stimulative feeding for me. Seven colonies were prevented from swarming by cutting out all queen-cells every 6 days, giving plenty of room and wide and deep entrances like those that Dr. Miller recommends, and I tell you they were the bees that brought in the honey. In my opinion, colonies that do not swarm will give at least twice as much honey as those that swarm once give.

Clipping the queen's wing has its advantages as well as its disadvantages. Colony No. 14 swarmed first with a clipped queen. She was found at once and caged; the hives were changed or new ones put in their places, but the bees would not come back to the old hive, nor could they cluster, as the queen was not with them. They were all over the whole apiary, and finally after they flew for nearly half an hour I put a cage in the Manum swarm-catcher and set the catcher against a tree, when they immediately clustered and were hived as usual. For some reason or other they are more satisfied when they can cluster. It is natural for them.

Now this colony went to work at once and never swarmed out again, while 7 more colonies that swarmed with clipped queens came out two and three times, no matter whether I hived them on starters or full sheets of foundation, or gave them a frame of unsealed brood, it was all the same. Of course, we were always there to put the queens back again, but it is lots of work when they act that way. Now why did they do that? Will some experienced reader of the American Bee Journal give me some light on the above question? I had an idea because it was so tremendously hot during swarming time, and the swarms were so large, was one reason why they acted so strangely. To give an idea what the swarms did, let me tell the following:

Colony No. 10 swarmed at 9 o'clock, a.m. They were hived in a 10-frame hive, and in two days they had drawn out and filled 7 Langstroth frames with honey, and on the third day swarmed out again for the last time. One fine thing in favor of the clipped queen is, I never lose a swarm, while bee-keepers in this vicinity all around me lost from 2 to 6 swarms, letting the bees swarm naturally. In fact, I had quite a large swarm come to my apiary from a neighbor bee-keeper who lives within one-half mile of me. As he did not care for them, I united them with one of my colonies.

A short time ago I received 2 queens by mail. Both were introduced the same day to queenless colonies. One was accepted, but the other one, on opening the hive the third day, I found the bees balling her. I expected the queen to be half dead when I caged her again, but she seemed to be all right,

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I put more candy in the cage, put the queen and cage back again, and two days afterward I found her majesty tearing down a capped queen-cell, and the bees assisting her. I cannot see how I had overlooked that cell, and that must have been the reason they did not accept her in the first place.

La Crescent, Minn.

Methods of Introducing Queens

BY DR. G. BOHRER.

On page 279 (1909), Mr. R. E. Hickok gives his experience in the introduction of a queen, by dusting both the queen and workers with flour. And being successful in this one case, he states that he will try it again. Please permit me to suggest to him that it will be well for him not to regard this method of introducing queens as at all reliable. However, in case a colony is, and has been, queenless for 10 days or from which to rear a queen, thus being confronted by certain destruction, 2 weeks, and no eggs or larvæ available and all this during a honey-flow, they are most likely to accept a fertile queen by simply turning her in among them at the entrance of the hive.

But I once knew a colony of Cyprians to ball and kill a fertile queen when they liberated her by eating the candy out of the cage in which she had been mailed. They belonged to one of my neighbors who brought them to me the day after they killed the queen referred to, and said to me that if I could do anything with them he would be glad to have me give them a queen. I happened to have a mismated Italian queen in a cage, and the next morning after he brought the colony to my apiary, I smoked and drummed them quite a bit, so as to induce them to fill themselves with honey from their stores, which will put bees in a condition rendering them harmless. That is, they will not assume the offensive, but will act solely on the defensive.

Please permit me to digress slightly, and say that it is by the foregoing process that bees are brought under control so that persons can enter a cage, and with bare hands and face handle them with apparent carelessness before large gatherings of people without receiving a sting, unless they are pinched or led to believe that they are to be hurt, in which event they will sting quickly.

While in this mood I turned the mismated queen loose on one of the frames set on end, and leaning against their hive. And so far as I could see, not one bee disturbed her, but, instead, she went where she pleased unmolested, and at once became mistress of the colony.

I have called attention to the foregoing case to show that even where a colony is hopelessly queenless they will not invariably accept a queen when introduced by the methods that are as a rule successful, in view of which I smoked and alarmed them so as to cause them to fill themselves with honey, which, in addition to their helpless condition, as to any means of securing a queen, I regarded as an additional means of putting them in an inoffensive mood, as far as such a con-

dition was possible. And in the presence of all this I was still suspicious, and took the precaution of setting a frame on end against the hive in order that I might, by ocular observation, witness the moment in which they received the queen. And if they balled her I could at once dump them into a basin of water, which will cause them to let loose from a queen.

In fact, I do not regard any method of introducing queens, now in common use, as being invariably reliable, and, of late, when I give a queen to a strange colony I fix no definite time for her liberation. But I put her in a cage made of a piece of ordinary window-screen, wire-cloth, 4 inches square bent into a flattened cylinder with one end closed, by pressing the end of the cage perfectly flat, and closing the other end with a small piece of sponge slightly saturated with honey. Such a cage can be put down between the frames as near the center of the cluster as possible, leaving the end of the cage flush with the top-bars of the frames. Every day I take the cage out and note the conduct of the bees that adhere to it. If they cling to it as if bent upon the destruction of the queen, being unwilling to let go of the wire, it will be quite safe to conclude that they are not at all friendly to her. But if, on the contrary, they simply crawl over the cage, manifesting no feeling of anger, I feel pretty safe in testing the matter by liberating the queen on a frame of the bees, set on end against the side of the hive so that I can see the manner in which she is received, and if they do not bite at her, and prevent her from moving about over the comb as she wishes, I at once cage her again and leave her 24 to 48 hours longer, and then test the matter again, and so on from time to time until they do treat her friendly. I have been as long as 2 weeks in getting a colony to accept a queen. In the meantime, I look for and destroy all queen-cells that the bees start which requires careful and thorough inspection, for, if one is missed, and a young queen is hatched out failure is almost sure to result.

The first Italian queen I ever bought was in 1864, and was, as far as I know, the first Italian queen ever introduced in the State of Indiana. I had no experience in the introduction of queens, and was extremely fearful of failure; especially so on account of being chided for paying \$10 for a queen. (A "bug" she was called, and a humbug at that, by some of my skeptical neighbors.) I got her from Mr. Langstroth, and adopted a plan of putting her at the head of a colony on what I called "the nucleus plan," by putting a frame of mature brood in an empty hive. All the bees were carefully brushed off so that not one old bee was left on the comb. A number of young bees were emerging from the cells every minute or two, and such bees I thought were not likely to attempt to hurt a queen, as they never knew any queen but the one I was giving them. I put a movable division-board in the hive by the side of this comb of brood, and closed the hive for 48 hours, so that not one bee could pass either out or in. I kept them where the maturing and unhatched bees would not get chilled.

I turned the queen with the bees that came with her (about 50 in number, being shipped by express) into this hive when arranged as described, and at the end of two days I opened the entrance, and the few old bees began to fly out and in, and at once went to work. In a few hours I opened the hive and found several hundred young bees had emerged, and the queen had begun to lay eggs. In 3 days more I gave them another frame of brood, and in a short time had a good colony. This method will save a valuable queen without any risk of having her killed if properly managed.

Lyons, Kans.

Improvement Through Re-Queening

BY LEO E. GATELY.

Reasoning from effect to cause, it will be generally found that the unnatural difference in colonies in the same apiary can be traced almost invariably to a failing queen. As the slightest deterioration of the queen throws the colony into an abnormal condition, it is impossible to estimate the actual loss incurred by allowing colonies to queen themselves.

An important factor in the economics of honey-production is the improvement of our bees through the selection of breeding queens from colonies possessing the most desirable qualities, eventually bringing the entire apiary to a higher degree of permanent productivity. The apiarist who pays scant attention to the improvement of his stock will soon find the very foundation of his business gradually sinking. Without systematic efforts in this respect, an apiary will deteriorate slowly but surely, and the process by which it can be built up is equally tedious.

To anticipate satisfactory results from breeding it is necessary to decide what points we are to breed toward. One race of bees must be selected, and our efforts confined to that race alone. A first cross may occasionally prove superior to either race of which it is composed, but such results are seldom permanent, and are made so only by a limitless course of thoughtful selection.

If judgment is exercised in selecting colonies for drones as well as for queens, Italians can soon be so bred that they will cap their product as white and neatly as average blacks. For increased yields, simply select colonies giving the highest pound average, and breed from them exclusively.

Reasoning from a false analogy, many suppose that the propensity for swarming can hardly be bred out of any race. In this instance we are endeavoring to eliminate an instinct, and greater time is required to accomplish appreciable results. We can, however, produce, without delay, bees less given to swarming than were there ancestors, by simply breeding from those that swarm least.

Honey-producers should learn to rear their own queens. If you are not passionately fond of this branch of your business, rear them in spite of yourself, until it becomes a habit. Once formed, the habit will be turned into a love for

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queen-rearing. In the average apiary the expense of requeening is about 5 cents per hive. It should never exceed 10 cents, and all for labor.

The expense of requeening an apiary is preponderantly overbalanced by having colonies of the same strain, and all queens of the same age. Uniformity of work is thus secured throughout the apiary, which saves an endless amount of head-work and annoying labor. In connection with a system of wintering fitted to the locality, it amounts to the elimination of spring overhauling.

With the number of colonies the honey-producer has from which to make a selection, there is little difficulty in finding a few especially adapted to cell-building. Or, we can, directly after the swarming season or harvest is ended, go through the colonies of an apiary and remove their old and debilitated queens. In four or five days we come along with a comb of larvæ from the choicest colony. Remove the larvæ from their two best cells, dipping into their places those of our own selection. Then destroy all cells except the best two. Further examination of colonies receiving such treatment is unnecessary, unless we wish to see if the young queens have begun laying.

Sebastian Co., Ark.

Report for Season of 1909— Bee-Stings and Rheumatism

BY WM. STOLLEY.

The season of 1909 was partly favorable, and partly unfavorable, for bees in this section of the country. Up to the middle of July, everything went well, and from 30 colonies I secured 2,797 pounds of white extracted honey, of which 544 pounds were white clover, and the rest sweet clover, with an admixture of alfalfa honey.

After the month of July, drought stopped the flow of nectar entirely, and I had to feed 395 pounds of a mixture of honey and cane-sugar, viz.: 275 pounds of dark honey of the previous year, and 120 pounds of cane-sugar. By Nov. 1st all the bees were ready packed for winter, in all 38 colonies. I requeened about two-thirds of my colonies, and the rest have queens of the year 1908, all of my own rearing, and first-class, as far as I was able to test them.

We have had some very cold weather already, and also two heavy snows. The rainfall during the entire season was 17¾ inches.

The first light frost we had October 11th to 12th, but on Nov. 12th and 13th, we had the first real snowstorm; 4 degrees Fahr., above zero, and about 20 inches of snow on the level. From Nov. 16th until the end of the month we had fine, mild weather, and all the snow disappeared by Nov. 25, and the bees had several good flights. On Dec. 1, it again turned cold, and rain followed by snow kept coming right along until now.

December 5, 7, 8, and 9, were zero days, and at sunrise the thermometer registered 10 Fahr., below zero. We now have about 15 inches of snow on

the level once more, and still the snow is falling.

I have kept bees now for 30 years, and have an accurate account of all expenditures as well as of the income of my little apiary. The following is a condensed statement of results:

During the 30 years I realized out of my bees \$8,641.21. I paid out on account of them, \$1,867.19; hence I have the amount of \$6,774.02 for my labor; and, in addition to this, I have my little apiary, well equipped in every respect. But the money I got out of my bees, is by no means the best part of what I obtained by keeping them. My bees have been a source of great pleasure to me all these many years, pleasures such as the mere making of money never had for me.

BEE-STINGS FOR RHEUMATISM.

Besides this, I know that I have been greatly benefited by the effect of bee-stings received during all these years, when handling bees, as there is no doubt in my mind, that I would have been a sufferer from rheumatism without them. My mother was a great sufferer from rheumatism, and I believe that I inherited the inclination from her, to be afflicted likewise. But although I am now nearly 79 years old, I am, owing to the bee-stings received, entirely free from that terrible ailment; and what is more, I have relieved and cured many a sufferer from rheumatism for many years.

Now, it is no wonder that I noticed Dr. A. F. Bonney's article (page 300, of the September, 1909, issue), and when reading it I at once decided to pay to the Doctor my respects, as soon as time would permit me to do so.

After reading Dr. B.'s rather presumptive criticisms on the matter at issue, referring to Mr. Louis H. Scholl's standpoint (page 236, and the Doctor's subsequent letter to Mr. Scholl, page 365), I would refer to a case in point, published many years ago in the American Bee Journal, which, however, bears re-publishing, so as to enlarge the medical knowledge of the Doctor, and to set him to thinking, instead of asserting things.

The only question is, Will bee-stings cure rheumatism?

Dr. Bonney claims, that they will not cure, but I say, *they will in very many cases, that is, inflammatory rheumatism, and will always subdue and ease the pain.* Of very many cases, which in the course of 30 years, came under my personal observation, the following is as good as any:

A gentleman by the name of Geo. Loan, at that time the street commissioner of Grand Island, and still among the living, was suffering terribly from inflammatory rheumatism, at about 70 years of age.

For about 8 months Mr. Loan was confined most of the time, and several of our learned doctors were pumping medicines into the sufferer, and kept his legs well greased with their useless liniments; but in spite of all the doctors were able to do for him, the ailment got worse and worse. The children of Mr. Loan had heard of the "Stolley bee-

sting cure," and they insisted on him giving the bee-stings a fair trial.

At last Mr. L., to please his children, consented to be taken to my farm. He was utterly unable to walk, and had to be lifted out of his carriage. The rheumatism had finally settled in one knee. The swelling was simply fearful, and the pain, as Mr. L. said, was terrible. He told me that he had not the least faith in the bee-sting cure. I told him that that would make no difference as to the effectiveness of stings, and that he would not be a cent out of pocket in trying it. So I gave my patient to begin with, 7 stings on his sore knee, and told him to call again a week later.

The next Sunday Mr. Loan was brought down to the farm again. He got out of his vehicle without help, and said, "Mr. Stolley, I begin to believe in your bee-stinging; the pain in my knee was almost gone before I got back to town, (1½ miles), and, you see, my swollen knee is shrinking some."

That day Mr. L. received 9 stings, and it was agreed upon that he should come again the next Sunday, when he was on hand promptly; he got out of his carriage, and walked almost without limping and said, "Your bee-stings have done wonders; why, now I want a whole lot of bee-stings." I objected to his request, but agreed that I would give him 15 stings. As it happened he received but thirteen stings, while two went into my own fingers.

Mr. L. was under orders to call again the Sunday following. During the week I did not hear how he was getting along, but went to town on Saturday, the day before he was to come out again to my farm. The physicians in the city, of course, heard of what was going on with Mr. Loan, and watched the case closely. So, when I got to town on that Saturday, one of the doctors, who had been dosing Mr. L. with medicine, and kept his legs greased, for 8 months, approached me thus: "Say, Stolley, have you heard of Loan?"

I answered, "No, I have heard nothing about him for a week."

"Why, Loan is dying; he has an awful fever. Look here, Stolley, if L. dies you can be held responsible for it. You have no right to practice medicine."

Now, while this conversation took place, I noticed Mr. Loan coming, walking as though nothing ailed him, along the street towards us, but the doctor could not see him, for the simple reason that he had no eyes behind, and talked right on.

So I knew my Mr. Loan was all right, and not dying, and I told the "learned" doctor that I always should insist that I had the constitutional right, in this free country, to give to sick people bee-stings, if they were in need of them, and asked me to apply them, in particular, since I was not charging anything for stings, time and trouble.

Meanwhile Mr. Loan had come up, right to where I talked with the doctor, who, being blind behind, was not aware of his presence.

At this juncture I lifted my hat, and gravely addressing the doctor, I said, "My dear colleague, Dr. E., I have the pleasure of introducing to you my patient, Mr. Loan;" and turning to Mr.

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L., "Please tell the doctor what bee-stings have done for you." And he did tell the doctor:

"Why, doctor," Mr. L. said, "look here"—(and he threw out his former sore leg, and shaking it to demonstrate how nice and limber it was after the 3 weeks of bee-sting cure—"for 8 months you doctors kept me most of the time in bed, and in pain; you have filled my stomach with medicine, and almost ruined it; you have taken \$200 out of my pocket for thus treating me, and only made my sick leg worse. *You are no doctors at all.* If you want to learn something about the cure of rheumatism, why, go down to Stolley's farm, where you can learn all about it."

Here I again politely lifted my hat and told the "learned" doctor, that it would give me great pleasure indeed to teach him how and where bee-stings should be applied, so as to add something practical to his lacking professional knowledge.

The foregoing is all I desire to say this time, as to the effectiveness of the bee-sting cure for inflammatory rheumatism.

And now I lift my hat to Dr. A. F. Bonney, and wish him a profitable New Year.

Grand Island, Neb., Dec. 10, 1909.

Something on Wintering Bees

BY F. GREINER.

Every year winter is still making inroads upon the stock of bees in many yards, and while a few bee-keepers are making the claim of never losing any bees during winter, the majority entertain at least some fear that the dreaded cold season may play havoc with them.

I have not had very heavy losses during a long term of years, but I am not so sure but what I may. The conditions vary so much from year to year. Early last spring I visited a bee-cellar of a friend. There were 275 colonies housed, and although the time was near to take them out, yet they were as still as mice. We were "poking" around among them for half an hour, tipping up a hive here and there, to get a better look at the beautiful yellow bees—yet none left their hives. They seemed to be in the most perfect condition. The year before the same lot of bees was very badly affected with dysentery, and many hives were still showing signs of having been badly spotted. In both years the bees had stored a nice crop of fine clover honey, and were practically handled in the same manner, yet there was this most marked difference in their wintering.

Another friend in my own town winters about 150 colonies in his house-cellar, and is quite successful. He always pries up the inner cover or honey-board, and raises it just a little, to allow a circulation of air. I prefer to give the needed ventilation in my bee-cellar only from the bottom of the hives. But he claims his bees would suffer from dampness if he did that. I judge there must be a difference in the conditions of our respective cellars.

In putting my bees into the cellar I aim to disturb them as little as pos-

sible. On the other hand, I have brought bees home from an out-yard, late in the fall, and, after jolting them over 15 miles of rough road, put them directly into the cellar, without noting any disastrous result. Generally, I make all the move in October, before the roads become bad. This is a good practice, because usually the bees have a chance to fly some before being housed, and, of course, the moving is done easier, and with greater comfort.

Locality is an important factor in wintering bees out-of-doors, and must be taken into consideration, although we may not understand wherein the difference lies, and, in that case, we have to be satisfied to find out by experience what is best in one, and what is suitable for the other.

One of my special friends, located in the other end of the county, concludes that it is detrimental to his bees to pack them early. He is using a sort of Quinby hive, which admits packing after the section supers are taken off. I rather prefer packing at an early date, fixing up things snug long before any snow comes. I have never known any bad results to come from this.

I still prefer upward ventilation through a thick chaff-cushion, for chaff-packed hives, and I am trying only a limited number each year under sealed covers. Other bee-keepers fare better by putting the packing on top of the sealed cover; in other words, they do not remove the inner cover or honey-board, and replace by a quilt, but leave it as the bees have sealed it after the surplus receptacle had been removed. Undoubtedly in some localities one plan works best; in another the opposite plan gives better results.

It is quite natural that some of us are looking for easier and cheaper methods to winter our bees. We find it cumbersome to have them in chaff. Cellar-wintering, on the other hand, requires a suitable repository, and it is no pleasant work to set the hives in, and out again later. We have tried wrapping our hives in black paper, putting on a deep telescope cover, with paper or bagging under it, and various other plans, but we are not satisfied to have found that easy and safe way we were looking for. Some years our bees came out all right with all methods; in other years, again, all would fail more or less. And so we keep on experimenting.

Naples, N. Y., Jan. 28.

Bee-Keeping in Southern California

BY W. K. MORRISON.

The business of honey-production in Southern California labors under serious drawbacks. Two of these will be readily appreciated—low prices, and long hauls to market over rough roads. Why the prices of high-class honey should rule low when the consumer is paying high prices, is not so easily explained, but I will try to analyze the situation.

The market for San Diego County honey is chiefly in Hamburg, Germany. The price obtained there is probably about 10½ to 11 cents per pound, and the price in Liverpool, England, is

about the same. The freight-rate is about one cent a pound, certainly not more than that, as the rate to Europe is less than to New York. Deducting dockage, etc., the net price ought to be about 9 cents, but the price obtained in San Diego is about 5½ cents per pound delivered. To the man who has his apiaries 40 or 50 miles from a railway station, over the roughest kind of a mountain road, this price is not encouraging.

As to who is responsible for this state of affairs, I shall not attempt to say, but let me point some of the causes of this condition.

First, the local market is poor, largely because of inferior methods of selling in the retail stores. A large percentage of the honey for local use is put up in Mason jars, for which the consumer is charged 10 cents in addition to the price of the honey. This deters many from buying at all. True, the grocer refunds the 10 cents, when the jar is returned, but, nevertheless, it is putting the case very mildly to say, that this is a very poor way to sell honey. I do not know of any other food product which requires a 10-cent package for 25 cents worth of goods. At present, butter sells for 40 cents a pound in San Diego, but the cost of the package does not exceed one-tenth of a cent. No doubt the butter-makers could use a glass butter-dish to place their butter in, but they don't do it. Why do bee-keepers do it?

There is a fine field in California for the cheap paper packages for honey, such as milk dealers use. I think paper bottles are made in Los Angeles, and possibly in San Francisco. In any event, I hope California bee-keepers will soon see the folly of using very expensive packages for honey. These are fine for exhibiting honey, and that is all.

As it is now, glucose by the carload comes here from Chicago overland, a distance of 2,500 miles, and is sold here at 6 cents per pound. In other words, the California people send their splendid honey to the East to be exchanged for glucose. They pay the freight both going and coming, and yet they say the people of the Pacific Coast are smart! I don't believe it. It seems to me it is the Chicago dealers who are smart. True, a large percentage of the honey goes to Hamburg, but they do not buy goods there. The money goes to Chicago to pay for the glucose, already bought. Wonderful business! California does a considerable trade on this basis. It trades fine olive oil for cotton-seed oil and cottolene, and so on. It is a grand thing for the dealers—and the railroads.

Very little is used by the baking trade in California—why, it is difficult to say. California used to be the banner wheat-exporting State, but now the biscuit business is controlled from St. Louis, Kansas City and Chicago. At present, one of the big trans-continental railroads is out of commission, and will be for some months, but it seems to me it would be a good thing for California if some more of them were washed out by the floods for awhile, until the Coast people learn to stand alone.

As regards comb honey, the situation

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is much the same. The California bee-keepers have not "caught on" to "canned" comb honey. Probably it is because it is a Southern idea, for most of the people here are from the North, and do not accept Southern ideas, not even prohibition.

It is my opinion there is a fine field for canned comb honey. The local market here for almost everything is good, and it is not at all difficult to introduce a new thing. Any way, it strikes me that a very large share of the honey produced in this State can be consumed at home at better prices than can be obtained abroad.

At present, the bee-keepers are poorly organized, or not organized at all, owing to the fact that they are so far apart; but the country is being rapidly opened up by means of good roads in addition to more railways, and it will soon be possible for all of them to get together occasionally and discuss ways and means for improving the industry.

It seems to me 2 cents, at least, could be added to the prevailing selling price of honey, and 5 cents to the price of beeswax. I see no reason why the price of good sage extracted honey cannot be raised to 10 or 12 cents, or the same figure that white clover honey will bring in the East. This can probably be best brought about by the canned comb honey idea, which would pave the way for better prices.

I have talked over this matter with several practical bee-keepers, but they cannot make themselves believe there is any profit in it. They have had it dinned so incessantly in their ears that "extracted" honey is the only product for them, that they cannot swallow the Texas principle without protest. I instance the fact that Dr. Miller and Mr. Doolittle both do without an extractor, yet they get good yields of honey. Still, they shake their heads. Many California bee-keepers could do without extra help in the apiary, if they could do away with the heavy labor of extracting the combs by centrifugal force.

By selling more honey locally, much heavy hauling long distances could be avoided. Many farmers here are good buyers, as they produce only one thing—wool, raisins, lemons, oranges, walnuts, etc. They even use the canned essence of the cow.

Good roads are going to help this section wonderfully. San Diego County recently voted bonds to the value of \$1,250,000 to build new roads, or remake old ones. Los Angeles also voted some \$5,000,000 for the same purpose, and the other counties will do equally well. This will make a fine beginning, and I note with pleasure that the money will be spent for the purpose the people voted it. Back in Ohio, I noted very much good money was being wasted on "good roads"; that is to say, the road-makers did not understand their business—politics was their business.

The roads here wind in and out and around mountain ranges, that are almost ideal for bee-keeping, but at present it takes a 4-horse team to do the work of one horse. Many a good bee-location is entirely neglected just for this reason. The day is not far distant when this will be changed, and the bee-

keeper of Southern California will come into his own. At the same time, I doubt very much, if the same amount of honey exported will again equal some of the fat years of the past. The local consumption will leap up with bounds, and possibly none at all will be sold outside.

It is something of a shame, that the United States, and, more especially, that part of it known as the "Pacific Slope," should allow so rich a food product as sage honey to go to foreign markets to get a fair price. It looks as if the Germans had more food-sense than Americans. To my mind, it is a disgrace, and something ought to be done to remedy this disagreeable condition of affairs.

San Diego, Calif.

Bait-Sections Not So Important as Changed Conditions

BY RALPH P. FISHER.

Mr. Adrian Getaz gave a few very interesting remarks under the head of "Swarming and Other Topics," in the *American Bee Journal* for November, 1909, which I think can be substantiated only in part.

In my candid opinion, from past experience, results go to show that too much importance is given the matter of coaxing bees by the use of bait-combs in section-honey supers. This in due regard for any advantages found in their use, for we all know the importance of having the bees of surplus colonies early at work in the supers.

How to do this effectually has been a matter of no little concern, and, to the point of being satisfactory, bait-combs cannot fully commend themselves, though they are an aid to a certain end.

I wish to describe a manner of operating dilatory colonies, showing that changed conditions will produce results far more satisfactory than the continual use of baits.

With me, it became evident that these lingering colonies were the ones that swarmed, and that those which entered the supers without coaxing went through the season without a sign of this ever-existing drawback. Granting any possible exceptions to this rule, it is likewise true that such lingering colonies, after having been baited, will swarm out when the sections are not yet one-half completed. In this case the baits served only an end, but failed to pay the master for the time used in the care and preparation of the previous year's cull stock. Then, on the other hand, the fact that a colony was remarkably early at work in the supers after being baited, is no criterion, for very possibly that same colony would respond as quickly without baits. So often has this been the case that I feel safe in writing this, knowing other comb-honey producers are laboring with the same obstinate troubles.

Since arriving at the aforesaid conclusions, I began the practice of following the large-hive idea and adopted the 10-frame Langstroth, perfected a system of operation including the hive of new

swarms in small hive-bodies. I was assured the earliness of section work is due, not to the direct influence of baits, but to the more remarkable condition of the brood-nest and natural propensity of the queen's progeny, more or less manifest from the source of nectar. Hiving these new swarms in small hive-bodies, with a super added, has the effect of immediate section work, with all the advantages favoring a full harvest. For hiving purposes I use a Danzenbaker 10-frame body with full sheets of comb foundation, allowing the bees this domicile throughout the surplus season, transferring in the fall to the standard 10-frame Langstroth hive-bodies. At this time, if the occasion requires, requeening is practiced, though in either case the method used in transferring is quite the same. I shake the bees from the Danzenbaker frames as in "shook" swarming, returning the combs to the hive-body, then place the whole over the Langstroth hive with an escape-board between. After a proper time has been allowed the transferred colony to get reconciled, the bees are encouraged to rob out their previously-gathered stores when they are made ready for winter on the summer stands.

I believe in large colonies, and consequently a large hive is needed in spring to permit of a prolific queen doing her utmost. The 8-frame Langstroth hive necessitates too much care and attention, often containing a surplus of last year's honey and pollen, preventing the queen's energy. With the 10-frame Langstroth this predominating feature is never a drawback, and it is easier to add than take from, in the event of too much dry comb, consequently this standard is preferred, since crop results are as satisfactory as when the 8-frame Langstroth hive is used exclusively.

From observation, it is also a simpler matter to know which of the colonies would need baits, and these are encouraged to swarm, as would be the case sooner or later, anyway, while the others are left alone, generally going through the season intact.

All this goes to show that there is more in changed conditions than with the trouble of depending on baits, in so far as this locality has to do with the methods of production. Having a regard for others differently situated, it is desired that they consider these fundamental principles in lieu of bait-sections in supers, and see whether production isn't very largely increased. Because I find the foregoing a direct improvement is no criterion, still the hiving of new swarms in small hive-bodies for the season, must commend itself to comb-honey producers more favorably than other methods having less advantages. The labor connected with the transferring business is within itself a matter unworthy of consideration, as with large parent colonies, swarming never exceeds 20 percent, and many seasons as low as 5 percent.

Therefore my experience seeks support, and is given with a hope that at least some one can add a mite to this manner of getting dilatory bees in the supers early.

Vienna, N. J.

Sale of Bulk Comb Compared With Section Comb Honey

BY L. R. DOCKERY.

My experience in the production of junk, chunk, canned or bulk comb honey covers a period of the last 3 of 11 years which I have devoted to bee-keeping. From this experience, I, like most others who have marketed this kind of honey, learn that it pays best. The task of putting up bulk-comb honey is a very disagreeable one. It is a task I look forward to as drudgery, and look back on with relief. Also the method most generally used in packing is another disagreeable feature, and it seems that a more attractive method should be the rule.

I am making a specialty of bee-keeping, however, and have gained my livelihood in this way for the past several years, and expect to continue to do so in the years to come. However, in all vocations, as well as all lives, we have the thorns as well as the roses, and a great success is always attended with obstacles almost innumerable.

In the year 1907, I bought 200 colonies of bees at Socorro, N. M., which were in a miscellaneous lot of hives. Standard hives and supers were ordered in which to transfer them, but owing to the delay in delivering the goods, the honey-flow had been on some time before transferring was begun, and during this time the stronger colonies were building up rapidly. It was plainly apparent that they would be able to store a surplus, if the room was provided, and for this reason, the supers belonging to the original lot, which were not provided with frames, were put on, and the combs were built to the cover. This was done with the idea in mind that the honey thus secured could be sold as "strained," and the wax sold separately.

Out of this lot of hives something like 2,000 pounds of bulk comb-honey was obtained. After being cut out, this honey showed such fine color, and looked so well, that I decided to sell the whole lot as bulk-comb instead of "strained." But as all readers of the bee-papers know, New Mexico is a country where section comb-honey is produced almost exclusively, and the offering of this for sale seemed rather an uncertain undertaking. I was expecting to make a cross-country trip, however, and decided to take samples of this honey with me. This I did, and met with immediate success, for every merchant approached gave me his order, and almost all of them mailed second and third orders for this kind of honey. These orders continued to come in long after the 2,000 pounds had been disposed of. Some of the merchants that had sent in orders and failed to get them filled, asked for quotations when the next season opened. This I did, stating that I had no bulk-comb honey but could fill their orders with section comb; but strange as it may seem, not one order did I receive!

There was a slight difference in the price of the bulk comb and the section comb honey, on account of the fact that the section is a more expensive way of producing it. Until this time I did not

realize that the ready sale for the bulk comb honey was accounted for by reason of its being put up this way, and I do not think the slight difference made in the price of the two kinds had anything to do with the slow sale of the section comb honey. I have seen many people, who, on seeing a section of comb honey the first time, declared it to be artificial, while no one seeing the comb in bulk will be suspicious of its purity. This may be one reason for the popularity of the bulk comb as compared with the section honey.

At the close of 1908, I sold out in New Mexico, and came to Texas. The man who purchased my interests there tells me, in a recent communication, that on account of the bungling work of an inexperienced bee-keeper in putting in foundation in frames, about 2,000 pounds of honey had to be sold as bulk comb, and that he found a very ready sale for it. Encouraged by this, he expects to abandon the use of sections, and devote all his time to the production of bulk-comb honey.

With these seeming successes of the sale of bulk-comb honey in a country where section comb is the rule, I am led to believe, that anywhere it is produced and offered for sale, a like success would be realized.

Goliad, Tex.

Black or European Foul Brood

BY G. M. DOOLITTLE.

It is with interest that I always read anything from the pen of Dr. C. C. Miller, but it was more than usual interest that held me while I read what he had to say on pages 394-5 of the December number of the American Bee Journal for 1909, regarding his experience with "European Foul Brood." The way he spread the disease by changing frames, took me back to the year 1872, when, during January of that year, I purchased some empty combs of a man whose bees had died over "the brimstone pit" the fall before, because he thought the colonies too weak in bees to winter. I noticed a few cells of capped brood scattered here and there in some of the combs, but then being a novice in bee-keeping, and not having known or heard anything of American foul brood, I fitted these combs into frames, and so during the summer, like Dr. Miller, "did my level best" to scatter and spread it throughout the whole apiary, by setting in those frames filled with combs one or two in different hives throughout the bee-yard. Before I got through with the job of curing a whole apiary during that fall and the next year, I became fully aware of what American foul brood is; and from the fall of 1873 to the present time I have not had a single cell containing that dreaded disease in either of my apiaries.

Time went on and as the year 1900 drew on apace I heard of a disease called "Black Brood" as being in the eastern part of this State, but from real, practical experience I knew nothing of what it was till about four years ago. However, away back in the latter eighties I ran across some brood in one of my

hives that set me to trembling lest I had a case of the old trouble, yet it was not the old disease of 1872-3. I shut the hive and let the colony entirely alone for 4 weeks, as the colony was strong enough to defend itself from robber-bees. At the end of that time, just at night, I again opened this hive, and found no trace of anything wrong, the same as Dr. Miller tells of his No. 13.

For a whole year I kept everything about that colony separate from anything else in the apiary, for fear of some contagion, but as nothing more was seen of it this colony was used with the rest for any and all purposes. Time passed, and in the latter nineties I found one day, about the first of June, two colonies which had the same thing, only to a still worse extent. These colonies were closed for a month, the same as the one was ten years before, and on opening again, not a single cell was found that showed aught but perfect brood. Having the experience of the other before me, I paid no further attention to the matter. About two weeks later foul brood inspectors Stevens and Stewart, of this State, called on me, and examined several of my colonies. I took them purposely to these two colonies, although I told them nothing regarding what I knew of their past, only requesting them to be very particular in their examination, because if there was any disease amongst my bees I desired to know it.

They both pronounced all the colonies they had looked at as perfect, and on their going away, I asked them to describe black brood for me. As soon as they did this I knew that those two colonies, had (the first of June) what was known as black brood, and so I kept all that belonged to them separate for two years. At the end of two years, as nothing further came of the matter, I paid no more attention to these two hives, especially, as they, like Dr. Miller's No. 13, gave about the best results of any of my colonies.

Four years ago last spring, my partner, Mr. Clark, established a small out-apiary near the one I had, and, when winter approached, he put 11 of his colonies in the farmer's cellar with my 30, and moved 9 of his 20 colonies near a piece of woodland, where we had decided to locate all of the out-apiary bees the next spring. In this cellar, with our 41 colonies of bees, was stored about 5 tons of cabbage, which, owing to low prices, were allowed to remain all the time the bees were in the cellar, and when the bees were taken out, the stench from the cabbage was anything but pleasant to our nostrils, although the bees had apparently wintered perfectly. The latter part of May every one of Mr. Clark's 11 colonies wintered in this cellar, and 19 of out of my 30, had black brood, some of them being so bad that fully half of the brood was dead in the cells, while *not one* of the 9 colonies wintered outside showed any signs of the disease, nor did they that summer. At the time, we thought the cabbage had much to do with the matter, but at "this distance" I think it very doubtful.

Mr. Clark shook all of his diseased colonies on foundation, the same as Dr. Miller tells of doing, and as far as was seen that year, all thus shaken were

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prosperous. He asked me if I was not going to shake mine, and I told him I thought not, especially if he would risk matters with his colonies which were with mine, as our bees were out of "sight and hearing" of other colonies, in a secluded spot under the protection of this large piece of woodland. He said he did not care so long as he could hold the matter there where it was and not spread it among other bees. I doubled all the colonies which were likely to succumb, and succeeded in getting a fairly good crop of section honey from the whole, although the number was quite largely reduced by doubling. Dr. Miller tells us that he marked all colonies having from 1 to 20 diseased larvae "bad," and all having more than this as "very bad." Those having from 1 to 20 cells with me were marked with an X; those having from 20 to 200, were marked with XX, while those having from 200 to nearly half the cells containing this diseased brood were marked XXX. Thus I could tell in the future all about what had been in any of these diseased colonies.

After the harvest of white honey was over, and the sections were removed, only 5 colonies showed any signs of the disease, and these 5 only a few cells; while all of Mr. Clark's, both those which he had shaken on foundation, and those not having the disease in the spring, were all right. Strange to say, only one of those showing signs of the disease at his time was marked XXX, two being marked X, so that those considered the worst in June did not so continue to the end of the honey harvest, as there were more at first of the XXX than of the others. All had normal quantity of bees for winter, together with necessary stores to carry them through. Owing to heavy winds, blowing in just in the right direction, the snow piled in very deeply around that part of the woodland where the bees were, so that the colonies became too warm, started brood-rearing and when spring opened the larger part of both Mr. Clark's and my own had succumbed, or were very weak, and spring-dwindled.

When June arrived I had only 3 colonies left, and of these one was marked with an X, one with XX, while the third was marked with XXX. On opening these hives not a trace of black or European foul brood could be found in either of these three colonies, while 2 of the colonies which Mr. Clark had shaken on foundation the year before showed the disease, one of them quite badly.

Mr. Stevens, the inspector for this locality, came around on his tour of inspection. After telling him all that had been done and what had not been done, he was requested to examine carefully the 3 hives marked with X, XX, XXX, especially this last, to see if he could find a single trace of any disease in that colony. He not only very carefully looked all the unsealed larvae over, but he uncapped hundreds of those which were sealed, and after this rigid inspection he said he was compelled to pronounce each of the 3 colonies free from all disease. And they have shown no signs of the disease since.

Those of Mr. Clark's, having been shaken the previous year, but showing

the disease again, were allowed to remain without further attention, and the out-apiary is today free from the disease, as far as can be discovered.

As this article is already too long, I will leave what I wish to say further for the next number of the American Bee Journal.

Borodino, N. Y.

3.---Bee-Talks for Beginners

BY JIMSON RAGWEED, OF INDIANA.

LATE FEEDING OF BEES.

MR. RAGWEED:—I have one colony of bees, very strong and much honey, but the honey is all sealed over. Our minister thinks they should be fed, and he gave me your name and address and has told me about your bees. During the warm days I fed them a spoonful of syrup, or what I could pour on the alighting-board without it dripping away, and they actually were very hungry; but since the weather is cool they refuse to eat more. How should I proceed? Perhaps this question is unusual, but I am a beginner, and any information will be thankfully received. I derive much pleasure in caring for my bees, especially since I am alone in the world.

Very truly,
MRS. SARAH B. GOOD.

DEAR MRS. GOOD:—I have your kind letter about your bees, and I take pleasure in replying. Your question is not unusual, but I think you have a wrong impression as to their need of more stores. Being strong in numbers and an abundance of sealed stores is a most excellent condition, and I think that no immediate attention is required. Feeding, when required, should be done inside the hive, so that no robber-bees can interfere, and the bees then deposit the syrup in the comb and consume it as required. By this mail I am sending a copy of a bee-paper, and I believe you would be much pleased with one of the bee-books which you will see advertised.

With kindest wishes,

JIMSON RAGWEED.

STIMULATIVE FEEDING IN SPRING.

DEAR UNCLE JIMSON:—Our bees did not do very well last season, but we will have an abundance of white clover this year, and pa wants me to write and ask your opinion about spring feeding, or what you call stimulative feeding.

You ask about Nathan. Yes, he still calls every Sunday and Wednesday evenings. Last Sunday evening he staid till 11 o'clock, and then he rapped on the floor upstairs, and he went right home; but he came back Wednesday evening. Ma has just found out that Nathan smokes a pipe, and so I don't know just what we will do yet.

We all send our love to Thursea, Sam, and the twins.

ELSIE RAGWEED.

MY DEAR ELSIE:—Jimson has gone to Peru today to attend a swine-breeders' meeting, and I thought I would write you. About stimulative feeding, Jimson says he knows some good, progressive bee-men who practice the method, but after trying it repeatedly he does not believe in it. He says he gets best results by doing his feeding all in the fall, and then in the spring, about the time the bees get their first pollen, he goes through each hive, brushing off bottom-boards and placing outside combs, that contain most honey, next to the cluster. Such colonies for us build up faster than those which we have tried to stimulate. When we tried spring feeding for stimulating, it seemed that the bees were en-

ticed to fly out, under the impression that flowers were secreting, and at every burst of sunshine they would start out, and such colonies suffered with spring dwindling, and just at the time of year when every bee counts.

We are all well except Eva. I pinned a red shawl around her and she and Steve went out in the yard to play, and our turkey gobbler attacked her. She is not hurt, but badly scared.

Your aunt,
THURSEA RAGWEED.

KEEPING SECTIONS CLEAN.

COUSIN JIMSON:—At the reunion Ci and I took a look at your comb honey in your beehed, and I want to ask you how to keep your sections so nice and clean. I have a lot of honey just as fine as yours, but the tops of my sections are fearfully stained. I use the very best hives and finest polished sections, and a heavy cloth over each super.

We are going to kill hogs next week. Can't you bring your family and come over? We had intended to butcher this week, but the moon will not be right till next week.

ARCHIE RAGWEED.

DEAR ARCHIE:—I think I understand why your sections are soiled. Some years ago all hives were constructed with no bee-space on frames or sections, but now all hives are supplied with a bee-space of about three-sixteenths of an inch, so that when we place the cover we do not kill the bees, and they can pass over one section to the other. With this bee-space neither propolis nor bur-combs are deposited, and when you use the cloth you are spoiling the very feature that is valuable in your hives. In the old hives the cloth was essential, but it should be omitted now.

There is a new calf in our barn, and we can not very well come next week.

JIMSON RAGWEED.

(To be Continued)

How to Make Honey-Vinegar

BY C. P. DADANT.

I am going to make some honey-vinegar next summer, and would like to have you tell me how to make it.

1. Where would be the best place to keep the barrel in the summer, in the shade or in the hot sun?

2. Where would be the best place to keep it in winter, in the cellar or up-stairs? My cellar is damp in winter.

3. Do you put anything in the vinegar to make it stronger? If so, when would you put it in the barrel, after the water and honey are in the barrel?

4. What part water and what honey is best?

5. How long does it take the vinegar to form?

6. What temperature should it be to make it work well?

WISCONSIN.

I like to see the matter on which information is wanted put into the shape of questions, so these questions are very appropriate, for they indicate about what the average bee-keepers wants to know on the matter of vinegar-making.

I will, however, not follow the line they indicate, but will try to answer them while handling the subject from one end to the other. I have already, at different times, discussed this manufacture, but after seeing and tasting the different samples of vinegar exhibited at State Fairs in which I was judge—in Illinois, Kansas, etc.—I conclude that as yet, there are very few persons who succeed in making good vinegar out of honey. So this will probably be useful

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to many. My aim is to give the most simple method by which any apiarist may be able to make honey-vinegar without putting himself to any inconvenience, or making elaborate preparations.

Let me first say that I have not found it profitable to make honey-vinegar on an extensive scale. It could, no doubt, be sold at a handsome margin if sufficiently advertised. But each family uses so little of this condiment that the advertising of it must be carried on by firms who handle other merchandise of the same kind—spices, oil, tea, coffee. If we cannot make a special advertising plan, we must be content with a local sale among our neighbors, who, when they ascertain the high grade of our vinegar, will gladly pay us from 25 to 40 cents per gallon for it. Each apiarist can, in the course of a season, readily sell two or three barrels of it at least. If you give it special attention you may sell more. The main advantage of it is that you can in this manner dispose of a quantity of inferior honey at paying figures.

The first thing to bear in mind is, that in order to change a sweet article into acetic acid (the acid of vinegar,) it is necessary for that sweet to pass first through an alcoholic fermentation. Both the alcoholic and the acetic may be carried on at the same time, but the one must always have the precedence, and the more thorough this fermentation is, the more thorough will be the other. It is also necessary to know that if the amount of sweet is too great—great enough to produce more than 14 percent of alcohol in the liquid—the time will come when the alcohol produced will destroy all ferment, both alcoholic and acetic. In that case the honey-water would be sweet—alcoholic and acetic at the same time. This would make a poor article. It is therefore well to make the honey-water just sweet enough, and not too sweet. It is also well to give the alcoholic fermentation full headway before inducing the acetic to begin.

A pound and a half of honey in a gallon of rain-water is about the best proportion for vinegar. But if you were simply to mix the two, you might meet the conditions I struck at my first attempt. Mixing water with honey, in about the proper ratio, and knowing that plenty of air was needed, I put the mixture into earthen jars holding from 4 to 10 gallons each, and left it to take care of itself. I succeeded in having only a decaying fermentation. My honey-water became *ropy* and insipid, and refused to sour. *Ropyness* is a disease of liquids, viscosity, which allows them to run in a thread, as a glutinous substance. My father, who was then living, and was better informed than I was, but had had no hand in this proceeding, asked me to read a little French treatise on the making of wine vinegar. Later I read several scientific descriptions of the manner of changing sweets into alcohol, and I readily perceived where I had failed.

The European scientists, especially the German and the French, have handled the question of honey-wines, honey-vinegar, and mead, in all their phases. This question of decaying honey-water has been explained by them. They tell us

that in gathering the honey from the blossoms the bees also gather (mechanically and without purpose on their part) many different germs found on plants and in the air. So honey brought in from the fields contains all sorts of germs. It is for us to develop those germs which will serve our purpose if they thrive, and destroy the others or prevent their spread. The honey on which I failed did not contain any germs suitable to start the alcoholic fermentation. As to the acetic, its germs are so thoroughly scattered through the ambient atmosphere that it is usually not necessary to produce it artificially, but, as I said before, the alcoholic fermentation must precede the acetic; the germs of vinegar will not feed on sugar.

When you have decided on the quantity of vinegar you desire to make, you should secure good barrels. Iron-bound barrels are the best, provided they do not leak. If they were to leak you will remember that nothing rusts iron like vinegar, and in a little while the iron hoops would be eaten through. Wooden hoops are very good, but are more apt to get out of place. The barrels must be free from musty smell. An empty whisky-barrel or a syrup-barrel of good quality will do. A cider-barrel will do if it has not been allowed to remain open or unwashed after emptying. Perhaps it will be as well to say how to keep a barrel clean after emptying it.

After emptying a barrel which has contained either sweet cider, hard cider or claret, rinse it thoroughly with plenty of water. If residues or dregs stick to the bottom, you will readily remove them by taking an old piece of cistern pump chain and rolling the barrel about, after having inserted the chain through the bung-hole. To make it more easy to remove, tie the end of it to a string passing through the bung-hole. Then let the barrel drain dry, burn a little brimstone in it, and bung it tight; it will remain sweet until you are ready to use it again. For vinegar purposes, if the barrel is thoroughly dried, it will not get moldy or musty, even if not brimstoned. If the barrels used had a musty smell, when employed for vinegar, no decent housekeeper would accept any of it for a gift, let alone paying you a good price for it.

Select your honey; honey-dew will do as well as any. Use one and a half pounds for each gallon desired. Put it in a boiler and heat it to about 180 degrees, taking care not to scorch it, which would give it a molasses taste. This also would injure its sale, for the taste of caramel is very persistent. Mixing it with water will avoid burning. The heat is for the purpose of destroying all germs. Of course you may use it raw, and accidentally secure the alcoholic fermentation at once. In that case you take some chances. Once the alcoholic fermentation is started, however, there is little to be feared of anything else, and the vinegar fermentation will soon follow, if the air be not excluded.

If the honey used is unripe, it will take more of it for the same quantity of vinegar, since it is more aqueous. Diluted honey-water, secured by washing of cappings and of vessels having

contained honey, and in which the proportion of honey is not exactly known, may be tested for this purpose, by the use of a fresh egg floating in the liquid. If the egg sinks, there is too little honey. The portion of its shell showing above the surface of the liquid should be about equal in size to a dime. A little more or a little less does not matter. Chas. F. Muth used only a pound of honey to the gallon of water; some persons use 2 pounds for the same measure. Half way between the two seems to me the best proportion for a good, strong article.

The temperature at which vinegar makes best is, according to some European authorities, about 86 degrees Fahr., or 30 C. But the exact temperature is not of importance, so that it does not fall below 70, especially during the first or vinous fermentation. To start the fermentation readily, the honey-water should be put warm into the barrels, somewhere below 100 degrees. Then add some fruit-juices that have not been boiled, grape-juice preferred. But cherry, raspberry, or other juices in considerable quantities will readily start the action, say a gallon or more to the barrel.

At first, if the weather be warm, there will be quite an effervescence brought about within two or three days, and the barrels would best be not quite full, say within 5 or 6 inches of the bung. The fermentation is very active when once started and if you left the barrel bunged you might have an explosion. In making claret, as we do not wish to allow vinegar fermentation, we protect the bung-holes of the casks with a sand-bag. An inexperienced man, in making claret, dropped the bungs into bung-holes of two large 600 gallon casks, thinking that the gas would lift them to escape. But the moisture formed over the liquid in the first few hours swelled the wood, the bungs held and the heads of those casks, 2 inches in thickness, were warped out until the liquid could make its escape. So be sure that the barrel is open. If you are after vinegar, plenty of air will be acceptable, and the acetic fermentation may begin very shortly after the other. A very fine brass or tin strainer, such as they use on milk-pails, will keep out flies and gnats, which are readily attracted. Ordinary wire-screen is too coarse, and, besides, would at once deteriorate from the gases which escape.

(To be Continued.)

Planning for the Coming Bee-Season

BY J. C. FRANK.

The season of the year is here when plans for the coming summer should be well matured. A large part of the success of the season depends upon the planning, and thought given to it. While it is true that no amount of planning can make up for poor execution, it is also true that the most diligent efforts can not atone for lack of forethought. Planning for the coming season should be done in the light of knowledge of previous years, and that gained by observation of the work of others. The

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one mistake that is found among bee-keepers everywhere is the failure to study the work of the past, and profit thereby.

In every locality there are outstanding successes and outstanding failures. These may be of a single crop, or they may extend to all branches of apicultural work. There could not be this variation when conditions as to nectar-producing plants, etc., are similar, without some reason. Why has one failed and another succeeded? Have you ever taken the trouble to solve the problems thus presented in your own experience, and that of your neighboring bee-keepers? If not, you have been missing one of the most valuable sources of practical information.

Sometimes the reason *why* is not so easily determined, but in most cases the thinking man can find it, and when he has learned to hunt for these hidden treasures, and then uses them in his apiary, puts them into practice, he is in a fair way to achieve the success every man prizes. The writer has seen men in what were called poor localities achieve better results than their neighboring bee-keepers with much better conditions. The one had given thought and energy to his work; the other had not. The fact is, that too many of us have never learned to think and reason. We have accepted the traditions and customs handed down to us without questioning their value, or determining the reasons for their use. They may suit our conditions, or they may not, and until we know we cannot keep bees intelligently.

The bee-keeper should be the greatest reasoner on earth. He has every condition favorable for the development of reasoning powers. He is breathing the pure, fresh air continually, is furnished with an abundance of healthful exercises, and has before him, always, problems for his solution, changing a hundred times every day to meet constantly changing conditions. No need to go into one of the so-called professions to develop the mind; the opportunity is before him continually.

Why, then, is the ordinary bee-keepers not a reasoner? Because he works by rote rather than by reason. If a bee-keeper moves into a new locality and follows methods in advance of his fellow bee-keepers, he will be watched closely, and, if he succeeds, his methods will gradually become the common practice of the neighborhood. His neighbor bee-keepers borrow his methods, or often unconsciously slip into them. Bee-keepers by rote, they have adopted the practices of the successful one without caring to find out *why* they are superior to their own. They have cheated themselves out of the mental development they might have had, and have degenerated into mere imitators, instead of workers and investigators.

These criticisms do not hold true of all bee-keepers, but of too large a percentage of them. There are men in every community who are thinking, reasoning, and investigating men, and are of inestimable value to their neighboring bee-keepers, and to apicultural work everywhere. All honor to them. But there should be more of them.

Dodge City, Kans.

Bees and Horticulture

Read before the Missouri Horticultural Society

BY M. E. DARBY.

State Inspector of Apiaries for Missouri.

A delightful combination; rich in nature study; full of practical and scientific research and moral teachings. In their life and habits, their relationship and mutual dependence, the one upon the other, we find a most beautiful and useful lesson in the harmony of nature—one which holds us in wonder and amazement, while we consider the marvelous provision in nature for the accomplishing of good results and the prevention of waste. Here we find the one getting its food supply from the other, out of a product—honey and pollen—that would otherwise be wasted; and, while so doing, is unwittingly performing a service that means the perpetuation of the species of the other. Hence we find that the profusion of nectar-bearing flowers, which are so generously produced all over the country, in cultivated orchards, fields, pastures and gardens, to be absolutely necessary for the well-being of the bees. While, on the other hand, the bees and other insects are a necessity to the fertilization of the flowers, and the production of seed for the perpetuation of their kind.

To enable the uninformed to better understand this relationship, let us briefly notice the construction of the flower, the arrangement of its parts, the functions performed; then the means for its pollenization, and the special adaptation of the honey-bee to this work.

The flower, which is but a special development of the leaf growth, is peculiarly arranged in itself for some special purpose; and those modified leaves are converted into special parts or organs to accomplish this prearranged purpose, viz., reproduction. For this end, these modified members are developed into two sets of organs, beautifully and systematically arranged.

1st. The outer or floral envelope, consisting of the calyx and corolla, which serve for protection and attraction.

2d. The inner or essential organs, consisting of the stamens and pistils. The functions that these perform bear a true resemblance to sex in the animal kingdom. The stamens, or male organs, the anthers of which are the principal parts, these contain the pollen-grains or fertilizing element. When the anthers are ripe they burst open and the pollen-grains are ready to be transferred to the receptive surface of the stigma.

The pistils, or female organs, consist of the ovary or seed-receptacle, containing the ovules, the style and stigma. The stigma is the upper portion of the pistil, which when ripe presents a viscid surface which receives the fertilizing element from the stamens. These essential organs may be contained in the same flower, or they may be in different flowers, and on different plants or trees.

THE FERTILIZATION OF THE FLOWER

In most plants there is a prepotency to foreign pollen; in others, the flowers are absolutely sterile to their own pollen; in others the essential organs come to maturity at separate times; still others

have the stamens in one flower and the pistils in another. This shows a wise provision in nature to prevent self-fertilization. Here we see the wisdom in the forces back of nature in providing the tempting sweets to entice insect visitors. Darwin summed this subject up by saying: "Nature abhors perpetual self-fertilization."

To accomplish perfect pollenization of flowers, so that a generous crop of seed or fruit may be secured, some animate or inanimate agencies must largely be depended upon to perform this service. In some plants and trees the pollen is of a dry or powdery nature, and produced in great abundance, so that the wind or inanimate agency does the important work. But in many cultivated fruits, the pollen produced is more of a sticky nature, and not produced so abundantly, and not so easily carried by the wind, making it necessary for some animate agencies, such as bees and other insects, to perform the greater part of this service. To induce insects to visit the flowers and perform this mission, nature placed a tiny drop of nectar, which is suitable for insect food, in the bottom of the flower in such a manner that, to obtain it, the insect must come in contact with the essential organs as it goes from flower to flower getting its food. Here the bees render a very valuable service to mankind, as pollen distributors—a service that we do not appreciate as we should, for the reason of our inability to measure the exact amount of service rendered, and, further, there are no established wages for a bee's day's work, whether it be organized or unorganized labor. Yet the bee knows full well what reward it will get, or what the penalty will be, if it "knocks off" and "goes on a strike," while the golden grains of pollen and silver drops of nectar are evaporating and wasting in a field that will be fruitless.

The bee is especially adapted to the work of distributing pollen, by being provided with a long, flexible tongue for lapping up the tempting sweets secreted in the nectaries of the flowers; its hind legs are provided with a pair of pollen-baskets, in which it carries great pellets of pollen to its hive, to be used in the preparation of food for the larval bees; its body is covered with a number of fine hairs or bristles, which gather the pollen-grains as the bee goes from flower to flower in search of pollen and honey.

While the bee is busy in gathering its precious loads to carry home to its hive, it is incidentally carrying the ripe pollen-grains from one flower to another, and brushing them on the receptive stigma; thus performing an act, as it were, of "touching the button" and sending the current of life down into the baby fruits, fertilizing the ovules, and causing the development of seed and fruit. Improper pollination results in a failure of fruit to set, or in its dropping before ripening. It has been asserted by those who have made the subject a careful study, that the work done by bees in pollen distribution is worth more to humanity than the crop of honey produced.

A majority of our fruits are evidences of the bees' good work. A large number of them have come as chance seedlings, being a product of varieties then exist-

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ing, mixed in the bloom by the bees; the ripened seed thus produced being dropped in some out-of-the-way place where it germinated and grew, having its struggles for life and sustenance, until it's beautiful, tempting fruit brought it into favor with man. It was then cultivated with care, and new plants started from it by some system of propagation, such as budding, grafting, layering or cuttings, whereby this valuable fruit may be produced with certainty, and be of use to man. It is sometimes very difficult to trace up these valuable chance seedlings, and place the credit for their existence where it properly belongs, and it should be mentioned here, and I do it with pleasure, that all the new and valuable varieties of fruits, vegetables and flowers, are not the product of wind and insects.

While nature may seem slow and somewhat reluctant in divulging her secrets, yet to him who has proven himself capable and worthy, by years of patient toil, much thought, and careful investigation, she delivers the keys that unlock her hidden forces. As subjects worthy of special mention in this noble work, we have a few horticultural giants, such as Bailey, Burbank, and others, who have gotten close enough to the heart of Nature to obtain that key which has enabled them to accomplish such great good all along the line of horticulture. Many new and choice fruits, vegetables and flowers are the products of their skillful hands. When these new productions are propagated in sufficient numbers, and set in commercial orchards, we find the majority of them require the visits of the bee to "brush life into their baby fruits," just the same as others.

So man, with all his boastful pretensions in controlling the lower forces of nature, would make a dismal failure in producing the abundant crops of fine fruit that supply the markets of the world, without the help of the industrious honey-bee.

It is sometimes said that Nature makes no mistakes. Yet freaks are no uncommon occurrence. Sometimes we find coupled on a man's shoulders a donkey's head, exhibiting all the stubborn, kicking and self-willed disposition of the real animal. A very good illustration of this character, is that man who repeatedly persists in spraying during fruit bloom, thus killing his friends—the bees—and injuring the bloom by poisoning the tender organs of the flower. Efforts to convince him of his error are in vain. He is at variance with the world, sadly out of harmony with himself, and you are forced to the conclusion that "to convince him against his will, he'll be a mule still."

A great many horticulturists are not bee-keepers, yet they should take that honest pride in helping to keep their neighbors' bees, that is characteristic of the liberal-minded man who knows when he has been benefitted, and is willing to acknowledge the favor. This seems easy enough in the blooming spring-time, when all animated Nature is in tune with the Creator; when the very air that surrounds us seems to be laden with perfumed poetry, set to notes almost divine,

and everybody loves his neighbor. However, when the latter part of the summer arrives, if there should be a scarcity of honey-producing flowers, the bees' short-comings are manifested; then, how soon the whole scene, stage and all, seems to tumble upside down, and rehearsal of prose—very common, every-day prose—mingled here and there with ugly nerve-grating epithets may be heard, out in the orchard, at the cider-press, and even in the kitchen around the preserve-kettles and jelly-pans. Bees, like human beings, are not without faults, and when the fruit-harvest comes on, they, like men, will go to collect a part of the crop that they have helped to produce. They, however, take the rotting, cut, punctured or bruised—the very culls of the crop—while man takes the best and then is not satisfied; he wants to cheat somebody by placing these culls in the middle of his boxes and barrels.

Bees do not lead in the ugly work of puncturing sound fruits, as many people believe. Their mouth-parts are made for working soft wax, and not for cutting and puncturing; but they will quickly engage in the work of carrying off the spoils, when the skin is once broken or cracked, as it often is after a sudden flow of sap, or when punctured by birds, yellow jackets, wasps, curculio and other insect pests, or by fungus growth which causes rot, which is so often noticed in peaches, in which case the broken-down tissue presents such a slight change at first that it is unobserved by the fruit-grower until the bees, that are close observers, have detected it, and are at work trying to save what would otherwise go to waste. Then the fruit-grower comes in and says, "The bees are doing it; I see them at it; you can't fool me!" He might with equal propriety say that the common, old, every-day buzzards were directly responsible for the death of some fine animal that he lost, because he found them feasting on its dead carcass.

These fruit-juices are decidedly harmful to the bees; but here, again, we find them acting like some people—imbibing too freely of that which does them hurt. But men do not wait for drouth or famine to cause them to hunt for the tempting of peach and grape. It is in time of scarcity, and under the above-named conditions that the bees swarm to our fruits, cider-presses and kitchens, and we, trying to follow out the principles of the Golden Rule in the relations with our bee-keeping neighbor, learn then how much easier it is to be a Bear, than it is to be a Bee.

In such occasions we should learn to use the "memory of services rendered, as oil for the rusty machinery of patience." Yet many people will spend much more time in grumbling and growling about some slight loss of these culls, and a few accidental stings received, than they will in thankfulness for benefits measured to them in the half-bushel.

Some people will magnify a bee-sting until it seems greater than a railroad accident, and still seem to be unmindful of their own cruel words and unkind actions, which may be stings of much longer duration to some neighbor or friend.

If the world would pay half the attention to the human stings that are inflicted along the highway of life, in the wild, delirious scramble for wealth, position, and power, that some people pay to an occasional bee-sting, what an uplift society could receive!

The colony inside the hive, again like human society, often maintains a large number of drones, which live by the toils of others; but, toward the approach of cold weather, the society of the hive kills or drives out its drones, while human society increases the number and gives them increased privileges. If the workers or producers in human society should deal thus with their drones, and public leeches, there would be an exodus to tropical climes, the like of which has never been known. Then, if the Red Sea could forever be closed in behind them, another Day of Thanksgiving and Prayer would be in order. But as they are here, and most likely to stay, let us hope that they yet may learn to emulate in good qualities the poor drone of the hive, which does but little harm outside of satisfying his enormous appetite, filling the station in life that nature intended he should, and disappearing with the close of the season. What a world this would be, if everybody would come as near performing his assigned part in life as does the poor and much-abused drone-bee!

Sometimes both bee-keeper and fruit-grower meet with disappointments by the failure of their crops. Then they wear the same kind of clothes. They wrap themselves in coats of hope for future success; they put on caps of faith in their chosen vocation; then feast their hungry souls on rich anticipations. "Fortunately, however, the perfection of a man's happiness bears but little relation to the size of his fortune," for he who can lovingly and patiently watch the slow developments from the bloom to maturity of fruits, and carefully protect them from disease and insect pests, and he who can keep himself in tune with the merry hum of the honey-bee while skillfully directing it in the production of a crop of honey—that sweet of all sweets—can find happiness and contentment not to be measured by dollars and cents. Such men are not idlers or drudging slaves on the public highways of life, although their work may be hard and constant; they are in reality students, teachers and rural artists, who understand how to guide Nature's trowel and paint-brush in putting on the finishing touches to their products. They understand what the same great Chemist who is compounding the food-values of the fruit, is filling the prescriptions in the honey-laboratories. They are intelligent and worthy citizens, and at present are on very friendly terms. We have now followed this congenial pair from the time, when the bee, which, a little contrary to the custom of her sex, first went courting the fair flowers, and when she betrothed her life in kissing life and hope into the fair blossoms; on up to where we found a little friction, that justly should not exist, and which was removed by an application of the Golden Rule; and now we find them marching down the aisle, strewn with flowers, to the march rendered by the mocking-

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bird high in the top of the Old Apple Tree, pausing under the Smilax for the question, "Are there any objections?" Springfield, Mo.

Bee-Keeping in Mexico

BY B. A. HADSELL.

In going south over the Mexican Central Railroad, I see by referring to my memorandum, the town of Logas has irrigated alfalfa, mesquite, catclaw, wild pepper, and cactus. Three locations are in view where, say, 600 colonies of bees might be kept. The next station, Francisco, with three locations or 600 colonies of bees. Both of the above towns have street-car. Siloo has 10,000 acres in corn in view—two locations suited for 400 colonies of bees; plenty of machocha, mesquite and willows. Land is \$100 to \$200 per acre beyond the town—good locations for 4 apiaries or 800 colonies.

At Irapuata strawberries are sold at the train every day of the year; also it is good bee-country, where one apiary is kept by a German. There has been only one frost in 20 years at this point.

Quertaro is the place where Maximilian was shot. Farm hands get 20 cents in gold per day, 1 peck of corn, and 1 peck of beans per week, and board themselves. In the factories they get 50 cents, 75 cents, and \$1.00 a day, and board themselves. Forty cubic inches of water and the land to put it on cost \$100,000. Artesian water can be had at a depth of 700 feet.

On ascending the mountain you look back over the valley and can count 13 artificial lakes for irrigation, and 20,000 acres of corn, all frosted, and nearly a total loss. I saw 50,000 acres of corn on this route, and south of the City of Mexico, toward Vera Cruz, almost a total loss by frost. It is estimated that the early frost damaged Mexico \$40,000,000. At Horseshoe Curve, on the railroad a few miles further on, the frost had not killed anything; 200 colonies of bees could be kept. The flume, all of masonry, to carry irrigation water, is 30 feet high and one mile long. In passing southeast over the International Railroad, each looks like a town with horse street-cars connecting the stations with probably 20,000 acres in corn in view, all frosted. Pulpa and barley are also grown extensively.

Then after leaving Delmonte, we look down out of the clouds upon a beautiful valley, 4,000 feet below us, dressed in living green, with crops in all stages; some planting, others harvesting, with the smoke from two large manufacturing towns. Here the railroad winds back and forth three times in the descent. We have dropped down out of the clouds. The frost-ridden, cold and dreary one-crop region through the gates of the Tropics—a bee-man's paradise, everything so different; you feel as though you were dreaming of Paradise, and wonder whether it is only a dream.

Cordova is a beautiful city, beyond description. There the Vera Cruz and Pacific Railroad goes south to Santa Lucrecio, where we connect with the Tehuantepec Railroad. From the time we drop out of the clouds it is one continu-

ous bee-country, except where the country is grass and devoted to stock-raising.

At Sanborn I examined an apiary which was in 10-frame Langstroth hives, painted, and in good condition. I was informed that they began with 14 colonies last spring, increased to 97, and

extracted two tons of honey. They sell 5-gallon cans of honey at \$9.00, Mexican money. I also see their honey on the market in Cordova, in 1-pound jars, at 80 cents per pound, Mexican money.

Buckeye, Ariz.

(To be continued.)



Wisconsin Convention Report

The 31st annual convention of the Wisconsin State Bee-Keepers' Association was held at Madison, Feb. 2d and 3d. It was called to order by Pres. Huffman, at 10:30 a. m., Feb. 2d.

The report of the secretary, and also of the treasurer, were read and approved. The latter showed a balance of \$177 in the treasury.

On motion, a committee on resolutions was appointed consisting of N. E. France, George W. York, and A. C. Allen.

Mr. York addressed the convention as President of the National Bee-Keepers' Association, and was followed by Mr. France, as General Manager of the National. The latter suggested the appointment of an assistant superintendent of the apiarian exhibit at the Wisconsin State Fair in addition to a judge. The committee on resolutions were instructed to embody such recommendation in their report. Messrs. York and France also spoke on increasing the membership of both the National and the State Associations, and several plans were suggested.

AFTERNOON SESSION.

The afternoon session was called to order by Pres. Huffman, at 1:30 p. m., after which he read the following:

President Huffman's Address.

I am pleased to meet the members of this the 31st annual State convention of Wisconsin bee-keepers, under such favorable circumstances. I am glad to see so many present, for there is inspiration in numbers. It is an important occasion, and I hope it will be very interesting to those who are engaged in the bee-industry though to a greater or smaller extent.

This convention is not called in the interest of those taking no part, simply seeking amusement. Such will not care to attend. It is a meeting for business, for deliberation, to hear reports, to decide on the best methods given. Men learn by asking questions. Here may be the place whereby we may receive a key which will unlock the many mysteries connected with the most wonderful and mechanical little insect. We can equip ourselves with the knowledge of how and when to act; where we may become conversant with the nature and habits of bees; discuss all questions pertaining to them; receive the opinions of others which prove as valuable; where all matters may be thoroughly ventilated; where we can unite with profit and emphatically say *no* or *yes* to all things common to the best interests of the bee-keeper. Through our convention proceedings the bee-keeping fraternity has become awake to bettering conditions. Through organization, and to my way of thinking, we

hope to keep the interest of the bee-keeper somewhere near its true level.

To those who have not experienced the helping influence of the state organization, I would say, try for yourselves. Who in our ranks has not, or would not have, welcomed valuable information on the honey crop and the honey market at such times; and would not be pleased to think *your* crop, together with that of your neighbor, could be handled for you to the very best advantage. While we have received valuable help in the past, we start out this year equipped with the advantages of the past, expecting greater things to develop in the future.

I would like to impress upon you the advantage and necessity of co-operation with your fellow bee-keepers in every possible way, for co-operation is the great factor of the twentieth century.

Bee-keeping is a science and a progressive science. Those who have the inclination are investigating, and ready to give us new points which will prove valuable. What we need in this State, and in fact every State, is a greater knowledge—a practical knowledge—of our industry. Here we have the privilege of listening to the papers and discussions of scientific and practical men. We find development in varied ways. Furthermore, we have men attending our conventions who have become students of the anatomy and physiology of the bee, and there are depths which, as yet, have not been reached. As one writer has said, we are in a high-tension age, and consequently look for greater results. No one would consider the expense of our gathering—the meager amount paid as dues—when compared with the benefits derived.

I see several writers have mentioned the subject of whether the bee does more harm than good to the fruit-growers! I hope this question will be discussed satisfactorily to all present, and that each may take away enough in his larder to be able to settle all disputes, or accusations brought against the most useful little insect.

There is, however, one other feature that I wish to mention, and though last, it is by no means least. The social hand-shake, the genial humor and sunny atmosphere which always seem apparent at our annual gatherings—the enthusiasm characteristic of our brother bee-keeper. Business without pleasure or sociability grows dull. There is an old adage, "Work and then play," or business before pleasure. I have no objection to this, but I think there is no harm to combine business with pleasure.

In conclusion I will say: Be yourselves. Be at home. Exchange smiles as well as thoughts, and we doubtless will make this convention memorable for more than one reason.

JACOB HUFFMAN.

Monroe, Wis.

The following paper by Miss Mathide Candler, of Cassville, Wis., was read by Secretary Dittmer:

Wintering Bees on the Summer Stands.

I have been asked to prepare a paper on wintering bees on their summer stands. I do not know that I can add anything new to this old, but ever interesting, subject; but, as I have had fair success in wintering bees out-

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doors, I will give a short account of my experience, and what I think I have learned from it.

I have changed my method of packing hives for winter, at different times. My first winter-case was a shallow box or frame, about 3 inches wider than the hive on all sides, which was slipped over the hive. It had muslin tacked to the rim so as to form a kind of sack under and around the hive, and about 6 or 8 inches was put on top. Then the muslin was neatly folded over and fastened in place with pins.

Later I used wooden winter-cases without bottom packing, using them singly, 4 in a case, and in long rows of 10 in a case. Then I began to experiment with tar-paper wrapped around the hive, and now I use that method of winter protection altogether.

Before putting on the paper I examine the top of each hive carefully to see that the cover is sealed down tight, and that there are no chinks, or crevices for the heat to escape, or for a draught through the hive. If the top is not tightly sealed I close the opening with clay, or paste a newspaper down over and around the top. About 5 inches of planer-shavings are then put over the sealed cover, the hive-cover is put on, and paper wrapped snugly around all. The entrance is left open the full width of the hive.

It seems to me that with a small hive-entrance bees are more inclined to have dysentery.

I like paper protection, for several reasons:

1st. Both bees and combs are dry. I think this is because the moisture condenses on the sides of the hives, due to the thinner and colder side-walls, instead of above the bees.

2d. While it is quite a little work to fix them up properly, the work is not heavy, and therefore it suits me best.

3d. It does not require so much storage-room as do wooden winter-cases.

From my experience I should say that there should be no packing below the frames, and not much on the sides; but a good, thick packing of some kind at the upper part, and above the frames, is necessary for outdoor wintering of bees.

Cassville, Wis. MATHILDE CANDLER.

In the discussion following the foregoing paper, Mr. Allen said that Miss Candler winters her bees in 2-story hives with the bees in the upper story. Mr. France said that her hives were protected under a bluff.

EXTRACTING HONEY.

"How ought good honey to be heated without injuring its color?"

Mr. York would heat it as high as 160 degrees, but it must be bottled at once, and there will be little granulation. It has, however, a tendency to injure both color and flavor, if kept for too long a time at 160 degrees or higher. He described a method of blending to make a good basswood flavor, to help to prevent granulation.

GETTING OLD POLLEN OUT OF COMBS.

"What is the best method to get the old pollen out of the combs?"

Melt the old combs, and render into wax, and then use comb foundation.

FASTENING FOUNDATION IN FRAMES.

"Which is the best and easiest way to fasten medium brood foundation in a Langstroth triangular top-bar brood-frame, wire or splints? Is it necessary to use either when foundation is re-enforced by brushing melted wax over part of it?"

The re-enforcement plan had not been tried by any one, but the majority agreed to try it the coming season. It seems to be the opinion of all for extracting combs that wire is necessary. The re-enforcement plan was demonstrated and explained by Mr. France.

The following paper by Harry Lathrop was read by Secretary Dittmer:

The Bee-Keepers' Need and Enemy.

What is it that bee-keepers need more than any other thing? The question is easily answered. It is a reliable market for honey.

What is the greatest enemy of bee-keeping in the United States? Not foul brood. That enemy can be handled by the intelligent bee-keeper. The greatest enemy of bee-keeping in our country is the glucose trust. The individual can fight disease, but he can not, alone, fight organized greed. Only the united effort of all producers can effect desired legislation; and we must also enlist the aid of all fair-minded people who want to see the right prevail.

The extracted honey that is sold in the country districts at the present time, amounts to only a drop in the bucket as compared with the glucose syrup that is sold under different names, usually as corn syrup. Whatever it is, it is not a natural product, and, by reliable information, is detrimental to health. Yet the trust magnates have the "gall" to advertise it as being "better than honey."

I will say here, parenthetically, that I have talked with some who have worked in glucose factories, and they declared that they would not eat the product that they had helped to manufacture. It seems, from what they told me, that hoofs and other refuse from packing houses are used to give "body" to the stuff!

The future of our industry depends largely upon the sort of fight that we can put up against this insidious foe. Considering society as a family, what sense is there in destroying large amounts of grain to produce an artificial product, when real health-giving nectar is going to waste all over the land, and the saving of which for the use of humanity needs only the encouragement of the workers (bee-keepers.)

The manufacture of glucose is on a level with the making of whiskey. It is not done for the benefit of humanity, or for the common good, but for greed. If things were made for use instead of profit, how much of those poisons would be manufactured and sold? Greed of gain is at the bottom, and bee-keepers, I hail you as a class of workers who would not have to give up your occupation if the reign of righteousness should actually come on earth—the federation of the world, the brotherhood of man, under the Golden Rule.

Bee-keeping will ever be an occupation of the people, available to the man or woman of small means. Industrial slavery of the masses is the aim, consciously or unconsciously, of organized wealth. If there is anything that the glucose trust would like to do today, it is to crush out bee-keeping as an industry.

Fifteen years ago the dairy interest of this State was fighting for its life against the great packing houses. The dairy interests were strong, and they won the fight. You of Southern Wisconsin know the result. See the wealth that has been added to our State, and the happy homes of comfort and prosperity, because organized greed was not allowed to sell something "better than butter," and manufactured from nobody knows what.

Our cause is as just as that of the dairymen, and more urgent, as the product being put out to displace honey is not as fit for human food as oleomargarine, no matter how highly the latter is colored.

There is important work for us to do. The bee-keepers are in the fore-front of a battle, the result of which may mean liberty and prosperity for the masses, or it may mean serfdom, with all the machinery of government, standing army, navy, etc., in the control of the money-power. Let the bee-keepers' contingent do their duty in the struggle. Bridgeport, Wis. HARRY LATHROP.

The nature of glucose and Karo Corn Syrup was discussed, and the use of both condemned.

The following paper by H. H. Moe was then read by the secretary:

Bee-Keepers as I have Known Them.

Bee-keepers themselves are an interesting class of people. By way of acquaintance, or an introduction, I shall present here in a brief paper my impression of some bee-keepers. Of course, I had read of some of the big men, and read something from some of them. It was my pleasure and privilege to attend the National Convention at Los Angeles, Calif., in 1903, and the Harrisburg Convention in 1907. These two conventions, at the extremes of our

country, brought me into contact with some of the big bee-keepers in various parts of our country. A photograph of the Los Angeles Convention is especially valued. It is an art work in itself, where such men as Prof. A. J. Cook, Dr. C. C. Miller, A. I. Root, George W. York, W. Z. Hutchinson, N. E. France, and a large number of other noted bee-keepers, were assembled. For this convention a special car for bee-keepers from Chicago to Los Angeles was chartered. This car the party of bee-keepers occupied for six nights, and the pleasure of this trip will long be remembered. The delightful visits, the beautiful songs, and wonderful scenery, are not soon forgotten. The only thing that marred the dignity of the party was the appearance of a deck of cards, one day, that tumbled on the floor. Some said, jokingly, that it was Dr. Miller's; some said it was Mr. Root's; but if any one claimed the deck, I failed to find out who it was.

One day, while our train stopped for a short time for dinner along the route in Western Kansas, many of us were hurrying to dinner at the hotel. Mr. Hutchinson and myself were together. Right in front of him was a very pretty girl who had just pulled a chair back from the table, which she no doubt intended to occupy. But Mr. Hutchinson was too quick for her, and squatted himself right down in her chair, and proceeded to do justice to the dinner. He was perfectly unconscious of the beauty of the girl, or that he had in any way been impolite.

As for our memorable visit to the Grand Canyon of the Colorado, that would be deserving alone of a longer paper than I intend to weary you with here. How our mid-night sleep was disturbed by the yip, yip! and bow, wow! of the coyotes. Mr. Hutchinson and Mr. France are big bee-men, but a trip down into the Canyon scared them out. They remained on top and described us as little ants crawling along the mountain side. Wonderful scenery, indeed! The interesting gospel service Sunday morning, by the bee-keepers, in the hotel—a place unused to such services—will no doubt long be remembered. And were they not appropriate? The beautiful song, "Not Ashamed of Jesus," by Mr. and Mrs. York, (the latter now deceased), will not be forgotten. Dr. C. C. Miller's resonant tenor voice in "The Rock That is Higher Than I," sounded especially inspiring in that region. A. I. Root, one of the best known bee-keepers in all the world, spoke on the text, "In all thy ways acknowledge Him," and his address also seemed very appropriate.

But I set out to write a brief paper, and not one to put you to sleep. You wish to know my impression of some of these bee-keepers? Being a school-teacher, my fellow laborers I would generally recognize as clean and intelligent. The typical leading bee-keepers I have met I can also characterize as clean and intelligent—two very high accomplishments, and not as common as I wish they might be. Nor are these characteristics possessed in so high a degree as they might be in certain quarters. But the typical bee-keeper is also a pure-bred Prohibitionist, and when I say that, I am paying them a high compliment. My first personal acquaintance with the Editor of the American Bee Journal was to learn that he had refused to publish a recipe for making wine out of honey. I immediately made up my mind that the Editor was indeed worthy of being at the head of a great bee-paper.

A. I. Root's attempt to curtail the tobacco habit by offering a bee-smoker to any one who would discontinue the use of the poisonous weed, (and if resumed, to pay for the bee-smoker), was, I believe, quite generally known. Let all such good work go on.

Should anything of what I have here said make any of the big bee-keepers sort of stuck up, you would better empower the president to take them down a notch or two!

Woodford, Wis.

H. H. MOE.

The discussion and reminiscences which followed developed some facts that Mr. Moe, naturally, would not mention in his paper.

SUGAR SYRUP FOR WINTER STORES.

"What is the best method to make sugar syrup for winter bee-food?"

Two parts sugar to one part water, thoroughly mixed by churning it

SEALED COVERS IN WINTER.

"Are sealed covers preferable to bur-

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lap for out-door covering for bees?"

Almost all those present preferred sealed covers for cellar-wintering of bees?

WINTER BEES' NEST—FEEDING SUGAR SYRUP.

"Do bees make a nest for winter?"

The general opinion is that they do.

"What is the best way to feed sugar syrup to bees?"

The Miller-feeder is the best to use for feeding bees for winter stores.

BLACKS VS. ITALIANS—FEEDING BEES IN WINTER.

"How many prefer the blacks to the Italian bees?"

No one.

"What and how would you feed bees when too cold to feed liquid food in winter?"

Put over the bees a super with comb honey.

FILLING EMPTY COMBS WITH SYRUP.

"How would you fill empty combs with syrup for winter feeding?"

Let the syrup run down on the comb on a slant, by pouring, which is faster than sprinkling.

LIQUID OR CANDIED HONEY—STRENGTH OF COLONY FOR WINTER.

"When selling honey in 60-pound cans, is it customary to have it liquid or candied?"

Candied, unless the market demands the liquid form.

"Is it desirable to have a colony very strong for wintering? Will it winter better than a medium colony?"

That depends on the age of the queen, and whether a large proportion of the bees are old.

This brought out the question, "How can you sort them from young bees?"

It was suggested to move the hive to a new stand, placing the empty hive at the old stand, and let the old bees return.

Mr. Huffman thought a medium colony would winter better than a strong one, as the latter would consume too much honey, and there would be too many dead bees.

DOOLITTLE FEEDER—CARNIOLAN BEES.

"How many have used the Doolittle division-board feeder?"

Mr. Allen has 50 of them, and likes them very much, especially in cold weather.

"Has any one tried the Carniolan bees?"

No one present had ever tried them. Mr. York mentioned Mr. Byer, a Canadian specialist, who prefers them to the Italians as honey-gatherers, but they are somewhat excessive swarmers.

PURE FOOD LAW.

"Has the National Pure Food Law been a benefit to honey-producers? If so, to what extent?"

It has given confidence to the consumer as to the purity of honey, but it has not raised the price of honey, nor increased the demand.

SHAKING ENERGY INTO BEES.

"Can you really shake energy into bees?"

Shaking bees for the purpose of putting them to work had generally been found unsatisfactory.

SECOND DAY—MORNING SESSION.

The convention was called to order by Pres. Huffman, at 9:30 o'clock.

The report of the committee on resolutions was read by Mr. France, as follows:

Report of Committee on Resolutions.

RESOLVED, That in the recent death of our oldest member, D. D. Daniher, of Madison, Wis., the last surviving charter member of this State Association, we have lost a valuable member; and hereby tender to his family our sincerest sympathy in their bereavement; that a copy of this resolution be forwarded to his family by our secretary.

RESOLVED, That this Association elect one of its members and also a substitute, as delegates to represent us at the next annual meeting of the National Bee-Keepers' Association; and that one-half the carfare of said one acting delegate be paid by this Association.

RESOLVED, That this Association recommend to the State Board of Agriculture, the appointment of a special Superintendent of the Apian Department of the Wisconsin State Fair. Be it further

RESOLVED, That Franklin Wilcox of Mauston, be appointed Judge of the apian exhibits at the Wisconsin State Fair.

RESOLVED, That the Executive Board of this Association (including N. E. France) investigate the publication of reports of its annual meetings; and arrange for such publication, with full power to act, taking into careful consideration the expense thereof, so that it shall not exhaust our treasury. Be it further

RESOLVED, That said Executive Board (with Mr. France) be authorized to take such measures as they deem wise to increase the membership of this Association, explaining the advantages of membership in both State and National Associations.

RESOLVED, That the President of the Wisconsin State Association and State Inspector of Apiaries, urge the Wisconsin State Legislature to enact a stringent law prohibiting the poison spraying of open fruit-bloom, for two reasons: 1st, that the invaluable pollinizing insects, including bees, are thus killed; 2d, that the open blossoms thus sprayed are largely destroyed.

N. E. FRANCE,
A. C. ALLEN,
GEORGE W. YORK,
Committee.

On motion, the foregoing resolutions were adopted.

Mr. France was recommended for the position as assistant superintendent of the apian exhibit at the Wisconsin State Fair.

The following paper was read by Mr. Allen:

Perfect Control of Swarming—Large Crops of Honey and Easy Increase.

When the subject of swarm-control is suggested, I realize it is one which has been threshed over until many it is a stale story. Yet because of the wonderful results which we anticipate would accrue from absolute control of this unpleasant feature of our occupation, we still aspire to the desired end.

While realizing that location has much to do with most plans, I believe the problem is satisfactorily solved for this latitude, and I cannot see why it will not work in most places.

Since we last met here, two plans have been given to the public, both of which, it is claimed, have proven a perfect success in the hands of those practicing them. One is a very wasteful way, and directly opposed to Nature's plans, and I think no one will doubt but that it accomplishes the object and discourages the swarming inclination, as completely as the beheading of all the larger children in a good-sized family, would discourage the parents who reared them.

To describe the plan which I have worked out, permit me to go back to the days when I began bee-keeping, and relate what led to its development.

Twenty years ago last fall I began the study of apiculture with the "A B C of Bee-Culture," and one colony, with my brother as half-share partner. Fortunately the colony

wintered well, and in anticipation of increase we purchased 2 second-hand hives, and paid a carpenter \$4.50 to make 3 more (which, by the way, he never made, so we still have "something coming").

Our anticipations were correct, for that colony did cast 5 swarms, and we saved 2 of them, the other 3, which were hived in nail-kegs and a cracker box, absconding. We also got \$5.00 worth of comb honey; but the loss of those vagrants so discouraged my brother that I bought him out, and decided to paddle the canoe alone.

In those days, desiring increase, swarming was considered an omen of success, and no sound was sweeter than to hear the cowbell, dishpan-drum, dinner-horn, and feminine voices shouting, "The bees are swarming!" when we would rush from field or garden and join in the fracas. This order of things continued until the apiary numbered about 30 colonies, and 2 to 4 swarms would appear at once, and go 20 to 30 feet high in the near-by maples, when I began to think differently about the swarming business.

1st. My first attempt to control it was by means of a perforated zinc trap, with a slide which I kept closed whenever absent from the apiary; but as most of you are familiar with its good and bad features, I will only say that it was but a few years before we discarded it for the following:

2. The advance step of clipping the queen's wing.

3. Next, large hives were advocated, and with many to-day their use seems to be about all that can be desired; but even with them where is the man who can say he never had a swarm when he did not expect it? I think it can be safely said we have all had some swarms from hives having an abundance of room, therefore it cannot be said large hives solve the problem; and with any of these three plans it was not safe to leave the apiary.

4. The fourth step was to clip out all queen-cells once a week. This was found quite successful, provided a cell was not missed; but it is a hard job to look so carefully over the combs of all colonies every week and not miss one; and sometimes the weather being bad, the bees were cross, but if we didn't go through them, we would have a swarming mania on the first sunny day. Besides, I know of no way that will degenerate an apiary so quickly as this very one, unless we constantly introduce new blood. Another objection to this system is that the colonies are kept all the season with the swarming desire, and we all know bees do not work as well when that is present. The satisfied, contented colony is the one that works best. I learned this fact, when, after losing several absconding swarms, no more were lost, by simply placing a comb of unsealed brood in the center of each hive in which a swarm was placed.

5. A fifth plan—that of certain hive manipulations, mostly with the sectional hive—has been recommended and practised with varying results.

6. And then a sixth came before us, that of shaking the bees on starters, compelling them to build new combs, which, in the hands of many, seems to be wonderfully conducive to sulking, absconding, and general discontent, on the part of the bees thus handled.

7. I will now offer a seventh. You know 7 is considered a complete number, so perhaps this is the last.

Studying upon the problem day and night, I began to put three facts together, viz.: 1st, a strong colony which will work all through the season making no preparations to swarm, is the one that gathers the most nectar.

2d. A new swarm hived on empty combs and one comb of unsealed brood, works with the greatest of energy, with no sulking or absconding.

3d. As the stirring up that a colony receives when shaken rightly and at the proper time, unquestionably puts new vim into them, led me to see if I could not combine all three of these strong points, and thereby accomplish the desired end; and it would seem that I have hit it, for there has not been one failure after trying it three seasons.

In performing this, the operator may shake or not, as he chooses, and results will be about the same, for if we happen to discover the queen when we first open the hive, she can be put in her proper place, and the shaking dispensed with. We will call it the "Non-swarming Brood-Exchange Plan."

Nearly every method heretofore used to prevent swarming weakens the colony, but this does not; the entire colony is kept together for the clover flow, and is made stronger for

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the fall than it could possibly be were it not thus treated. Your boy or girl, hired hand—yes, even your wife—can do it as well as you can, and your mind can be at rest, for the bees will not swarm that season.

Every means possible is used to get all colonies strong at the beginning of the honey-flow, and in the case of 8-frame hives, the queen is given the run of two stories for egg-laying; thus the swarming fever is not contracted before the clover flow starts, and just as it is nicely on I apply the treatment, which both prevents and satisfies all desire to swarm, and causes the queen to continue laying as vigorously as before; thus getting a fresh lot of workers ready for the fall flow, instead of slacking up on laying at this time, as is the case if left to themselves.

When the honey-flow is well started I go to each strong colony, regardless of whether the bees desire to swarm or not, and remove it from its stand, putting in its place a hive filled with empty combs, less one of the center ones. Next, a comb, containing a patch of unsealed brood about as large as my hand, is selected from the colony, and placed in the vacant place in the new hive; a queen-excluder is put on this lower story, and above this a super of empty combs, this one having an escape-hole for drones; and on top of all, an empty super. A cloth is then nicely placed in front of this new hive, on which the bees and queen are shaken from the combs of the parent hive, and the third story is filled with the combs of sealed brood and brood too old to produce queens, and allowed to remain there and hatch, returning to the working force. Thus the swarming fever is satisfied, the colony is stimulated to do its utmost in honey-gathering, and the queen is encouraged to lay as in spring-time. Yes, much better, for in two weeks she will have 5 to 7 combs filled with brood and eggs, which forces the honey above, where we want it.

It does not take five minutes for the bees to find that brood above, where it is nicely cared for. There is no sulking, for in less than an hour the colony is at work as though nothing had happened, and as the brood hatches its combs are filled with honey, and often a fourth story has to be put on to catch the flow, for in keeping the whole colony together we get big results.

The old hive often contains more brood than will go in this third story, and the balance is put on any weak colonies that may be in the yard, thus strengthening them.

If I want increase, it is made about 10 days afterward, by simply lifting this upper story of brood off and placing it on a new stand, and given a ripe cell, or a queen. As all bees that are old enough to be field-workers will return to the old stand, nothing is lost from the clover crop in this way, and these new colonies sometimes secure a super of fall honey, and are the very best to go into winter quarters, as all their bees are young.

If any of you will try this plan, I will be pleased to have you report results, and any questions or criticisms will be gladly considered. A. C. ALLEN.

Portage, Wis.

Mr. Allen demonstrated his non-swarming plan, and many questions were asked, showing much interest in his methods.

Mr. York then read the following paper on,

Honey—Its Marketing and Staple Use.

To some bee-keepers the word "honey" is almost a new one, so far as the honey season of 1909 was concerned. A few not only harvested no honey at all, but even had to feed their bees; or else what their bees did store was honey-dew, which in some instances, was but little better than no honey at all, and in other cases worse than none, especially for the bees' winter stores.

But as the good honey season have been in the past, so they will be again in the future. About 20 years ago there was considerable said about the then poor and discouraging honey seasons, many bee-keepers even wondering if the good honey crops of the early '80s would ever be repeated! But it was not so very long until the good old seasons came again, and with increased amounts of honey, so that the crops of 1903, 1906 and 1908, were even more abundant than those of the former bounteous years.

While, of course, there will be little or no difficulty experienced in disposing of the

honey crop of 1909, very likely another large crop will soon be here, and the question of marketing it will be up for consideration again. In the meantime it may be well to look at some of the present most successful methods of disposing of honey.

Perhaps the bulk of the honey crop each year is sent to the large city markets—sold wholesale. This, of course, the easiest way to sell, but not always the most profitable to the producer. And yet, for the most extensive producers it is the best way, for such can not hope to work up a demand at home sufficiently large to take all the honey produced in their immediate locality.

But all who ship or sell wholesale should be exceedingly careful with whom they deal. There are commission men who handle all kinds of produce, and such do not know best how to dispose of honey. They seem to think that any old price will do for honey, so long as they get their commission on the sales they make. And thus often the market is ruined before much honey has begun to be shipped.

In nearly every large city there are now commission men or dealers who make a specialty of honey. They have developed a line of customers to whom they can sell honey right along, year after year. Such dealers can usually realize much better prices for the producer than can the ones who know little about honey.

Every bee-keeper publisher knows pretty well who are the reliable and best wholesale honey-dealers, and if every bee-keeper reads the bee-papers (as, of course, every up-to-date bee-keeper does), he will have little trouble about learning where it is best to ship his honey.

Next is the retailing of honey—that is, selling it near home, or to consumers residing within a short radius of the producer. Many bee-keepers, after years of patient effort, have developed a good local demand. If more would do this, I think all would soon find that better prices, both wholesale and retail, would result. Less honey would be sent to the already overloaded city market, and thus, by reason of less quantity, a higher price would be realized; and by cultivating the home market, it would be found that soon more honey would be required to supply it, or else what honey there is to be disposed of there would bring a better price. The fact is, there are thousands upon thousands of people in the country and in small cities that do not see any honey from one year's end to the other. And this ought not so to be. It surely doesn't pay to neglect the home market, and overstock the large cities with honey.

And this brings me to a consideration of honey as a staple article. You ask, Will honey ever be used as commonly or as extensively as sugar? Maybe not. But the fact remains that it ought to be used ever so much more generally than it is today. And it is "up to" the bee-keepers themselves to see that honey has its rightful place among the articles of daily consumption. I say daily consumption, and I mean it. I declare that honey should always be on every table, just as much as butter or any kind of sauce or fruit. And surely at the present price of extracted honey, why should it not be eaten daily? Oh, yes, I know that some people say that they don't care for honey! But I have found that there are but very few people who would not eat honey pretty regularly if they had a chance!

Right here I want to touch upon the form of honey to be placed before the people, if we ever expect it to be used extensively, or by practically everybody.

Of late, my attention has been called to chunk or bulk comb honey, which has been in recent years such a success in certain parts of the South, especially in Texas. Do you know, I believe our Southern brethren have hit upon a good thing, in more ways than one? In the first place, they can produce more honey by their present methods than they could if produced in sections or even in the extracted form. And then, they get a higher price for it than they could expect for the liquid honey free from the comb. They produce all their honey in shallow extracting-frames, then cut it out and put it in tin cans of various sizes, ready to be delivered to the consumer. And I can readily understand now nearly everybody would take to such honey, just as naturally as a duck takes to water. It has the real bee-honey taste. There is nothing about it that suggests artificiality, as do the clean, white sections, free from even a stain of propolis or bee-glue. Chunk or canned comb honey shows on its face that it is the real honey simply

cut out of the hive and placed on the market. It could very well be put into tin pails or other receptacles, that may easily be handed out to customers. I predict that this method—which may seem somewhat slipshod, and savor a little of the back woods—will be practiced pretty generally over the whole country within a very few years. It is a sane, sensible, successful method. It is economical for the producer—no sections needed, but plenty of shallow frames; more comb foundation, more hives, more supers, and then more honey harvested. And, with plenty of such super-room on the hives, there is going to be less swarming. The honey is not removed from the hives till the end of the honey season. Result, a better quality of honey because thoroughly ripened while with the bees.

But I didn't start out to boom chunk, bulk, or canned comb honey. And yet, I believe it is going to prove to be the method which will help most to popularize the use of honey—help make it a staple article of diet—sooner than anything else I know of. I think this method needs to be encouraged, because it will also put more money into the pockets of the honey-producers; more money in the bank for the bee-supply manufacturers and dealers; and thus bring the greater financial success to all connected in any way with the industry of bee-keeping. And above and beyond all this—and also more important—more people will be eating honey, and thus more people will have better health, will live longer, and be happier. And, maybe, more people will be keeping bees, more bee-keepers will "keep more bees," and thus there will also be produced more and better fruit because of the more perfect fertilization of the fruit-blossoms throughout the country on account of the presence of a larger number of bees to do the work.

Now, you may say that all this looks very well on paper, but it is the talk of an enthusiast. All right, let it be so. But what I am telling you is already being accomplished in Texas and other parts of the South—that fair land that has in very recent years been teaching the North how to "sober up" and get rid of the curse of the open saloon, State by State. Who knows but our Southern bee-keeping brethren and sisters will yet teach us of the North, how to "sweeten up," as well.

Let us not despise our calling, but let us go forth to help make our goodly land "a land flowing with honey," whether it flows with milk or not. Our dairy cousins can look after the cow and milk part of it; let us attend to the bees and their honey.

Chicago, Ill.

GEORGE W. YORK.

An interesting discussion followed the foregoing paper, in which some gave their experience with chunk-honey, which was both pro and con.

The election of officers resulted as follows, each being re-elected: President, Jacob Huffman, of Monroe; vice-president, Franklin Wilcox, of Mauston; secretary, Gus Dittmer, of Augusta; and treasurer, A. C. Allen, of Portage. Delegate to the National Convention for 1910, Jacob Huffman; alternate delegate, A. C. Allen.

The question-box was again resumed.

POLLEN IN WINTERING—GASOLINE ENGINE IN EXTRACTING.

"Do bees need pollen for wintering?"

They do not need it, and are much better off without, as it is liable to be the cause of diarrhea.

"Will a gasoline engine run a 2-frame extractor?"

If you want to use power, use a 4-frame extractor.

CELLAR-WINTERING—PREPARING NUCLEI FOR WINTER.

"Why are some colonies dry and others damp in the same cellar?"

This question was discussed, but no satisfactory reason given.

"Give the best method to prepare nuclei for winter."

Set them on top of strong colonies, with a ¼ inch board between them.

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INTRODUCING QUEENS—SHADE FOR BEES.

"What is a simple and reasonably safe method of introducing queens?"

Mr. York reported success in nearly all cases by "drowning" the queen, or holding her under water, and then dropping her into the hive, having removed the old queen the day before.

"What is the best way to provide shade for the bees?"

What do you want shade for? If you must have shade, use shade-boards only. Too much shade makes the bees cross and slow to go to work. Sunshine makes not only better workers, but better honey.

UNITING WEAK COLONIES—TO PREVENT SWARMING.

"Should weak colonies be united in spring?"

Generally speaking, no.

"Will it prevent or lessen swarming to move the hive backward on the bottom part 2 or 3 inches for free circulation of air under the brood-chamber?"

It will check it to some extent during warm weather, but do not have the draft in the upper part of the hive.

MEETING WITH HORTICULTURISTS.

"Is it advisable to have one or two joint sessions with the horticulturists?"

Mr. France explained that there might be an advantage; that we could have some of our papers in the State horticultural bulletin.

Mr. France was appointed a committee of one to confer with the Horticulturist Society in regard to this matter, and to have the paper prepared by some member to be read to that society at its next meeting.

AFTERNOON SESSION.

The convention was called to order at 1:45 p. m., by Pres. Huffman. No other business appearing, the question-box was again taken up.

NATURE OF BEES—SELLING HONEY IN CANS.

"Are bees better natured now than they were 20 years ago?"

All seemed to be of the opinion that they are the same now.

"Should honey in 60-pound cans be sold net or gross weight?"

Mr. Allen always sells gross weight, but there seems to be no rule, and all were of the opinion that gross weight is right.

MORE EXTRACTED THAN COMB HONEY.

"How much more extracted than comb honey can be secured from the colony?"

The general opinion is that more extracted honey can be obtained than comb, some even claiming to get double the amount of the former, but there is no rule.

"Will a colony that does not swarm yield more honey than where they swarm?"

It seems to be the experience of all who have observed, that bees will store more honey without swarming.

REDUCING FREIGHT-RATES—COMB VS. EXTRACTED.

"What will reduce freight-rates on extracted honey?"

Ship as fourth-class, by boxing the cans and pails.

"Which is more profitable, comb honey or extracted?"

Messrs. Allen, Putnam and Huffman all expressed themselves in favor of extracted honey.

BEE-CELLAR IN SPRING—STIMULATIVE FEEDING.

"Will it do to open the cellar door a few days previous to putting out the bees? Will it quiet them or make them more uneasy?"

It will do them good to open the doors during cold nights, but it should be closed during the day, if it is warm outside.

"Is spring feeding for stimulative breeding profitable?"

If the weather is warm it is beneficial for the honey-flow, and during the interval between two honey-flows, when no honey is being gathered, always considering the weather.

The convention then adjourned at 3.00 p. m., to meet at the call of the Executive Committee in 1911.

GUS DITTMER, Sec.

New Jersey Convention Report

The annual meeting of the New Jersey Bee-Keepers' Association was held in the State House, at Trenton, N. J., Dec. 18, 1909.

At 10 a. m., Pres. W. W. Case called the meeting to order, and gave a short address. He expressed himself as pleased with the activity of the Association the past year in working for a Foul Brood Law, and in increasing the membership.

SHORT CUTS IN THE APIARY.

The first talk was by J. M. Donaldson, on "Short Cuts in the Apiary." One of the first requisites to applying "short cuts" is to have the latest and best appliances; every hive and fixture an exact counterpart of the other in the apiary. Have all colonies numbered; keep an exact system of records; get rid of division-boards; and keep colonies free of drone-comb.

An excellent method of making increase is as follows: Take frames of brood from any colonies that are strong enough, with adhering bees, being careful not to get the queen; assemble them together in a colony, give them a laying queen in a cage, and in a week to ten days the colony will be as good as any in the yard.

He believed the capping-melter one of the best "short cut" appliances to be used. He said that to prevent the honey from being darkened, it should be allowed to run off as fast as melted.

In uncapping, he recommended a cold knife and downward cut.

Mr. Donaldson's talk was followed by discussions, of which the matter of records was the most important. Mr. Horner used the system of records advised by Mr. Donaldson. He has the numbers painted in large figures on the alighting board of the hive, and the records are kept on a slate. This system has many advantages. When a colony is changed in the yard, leave the alighting boards and make changes on

the slate. The numbers are at all times in regular order, and not scattered all over the yard as in numbering on the hive-body. Then, the slate can be taken into the shop or house at night, or on rainy days, and the condition of the apiary studied, and the work planned.

BEE RACES AND CHARACTERISTICS.

The next paper, "Races of Bees and Their Characteristics," was by Franklin G. Fox, of Erwinna, Pa., late assistant in the Government Apiary at Washington, D. C.

He gave a brief history of the introduction of the honey-bee into this country, saying that they were first brought here previous to 1763 by the Spaniards; they appeared in New York State in 1793. They were first noticed west of the Mississippi in 1807.

Briefly, some of the characteristics of some of the races were as follows: The only thing worthy of mention in favor of the blacks is that they are excellent workers on buckwheat, and build nice, white combs. The first Italian bees were imported into this country in 1860, and since that time have become almost the standard bee. Their characteristics are too well known to need description.

The Cyprians he described as good workers, good breeders, and not too cross to adopt generally.

The Carniolans he considered good breeders, good winterers, and good workers, and the gentlest of all bees. Their objection, so far, is their tendency to propolize so much about their hive-entrance on the approach of cold weather. But, he said, much of this could be overcome in the fall, and in having all the colonies face the south.

He recommended the Banat bees as best of all. He said their working qualities were equal to any other race; they are good breeders, but would not breed so much out of season as other prolific races. He said they are as gentle as Caucasians, gather almost no propolis, and swarm but little, making them especially desirable for comb honey production.

The paper was followed by a discussion. Some expressed objection to the Italians, that they were slow to breed up in the spring, especially if the spring was cold and backward. But the reply was that if the hive was full of honey, they will breed up in time for the flow.

SECURING FOUL BROOD LAWS.

Mr. C. B. Howard gave a talk on, "How New York State Secured a Foul Brood Law." The first thing they did was to secure the support of the Commissioner of Agriculture. The law was drafted so as to put the matter of inspection under the Commissioner. To secure the law, bee-keepers must stand together and support the Committee they elect to get a Bill passed. The bee-keepers throughout the State must write and see their senators and assemblymen, and explain to them what foul brood is, what loss it is causing, and ask that they support their Bill. The importance of the bee-keepers making their needs known cannot be overestimated. Bee-keepers must write their senators and assemblymen.

Wm. E. Housel gave a brief address

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on the efforts of the New Jersey bee-keepers the past year, in trying to get a Foul Brood Bill. He said that we had made a good impression—a good beginning—and felt that we ought to be able to get it this year.

In the discussion that followed Mr. Hornor suggested that we try to get an endorsement of our Bill from the State Horticultural Society. A committee of three was appointed to get the endorsement of that body.

There was now a general discussion of our Foul Brood Bill, section by section, by all present. Section 2 came in for considerable discussion. The part that authorizes the inspector to destroy diseased colonies, after the owner has been notified and instructed to treat the disease, and neglects or refuses to do so—part of the members contended that it would be destroying property without due compensation. But the other side contended that if the owner of bees refused or neglected to treat the disease, he was violating the law, and should therefore be penalized, and that the loss of his bees would be the penalty. Then, if the law provided for paying for the bees destroyed by the inspector, we would make it harder for the Bill to pass.

A business session was now held. The following officers were elected for the ensuing year: President, J. H. M. Cook, of Essex Falls; 1st vice-president, E. G. Carr, of New Egypt; 2d vice-president, Wm. E. Housel, of Junction; 3d vice-president, W. W. Case, of Frenchtown; and secretary-treasurer, Albert G. Hann, of Pittstown.

The following was elected to attend the meeting of the State Board of Agriculture, as our delegate: W. W. Case; alternate, Harold Hornor. The delegate was instructed to try to secure the endorsement of the State Board of Agriculture for our Foul Brood Bill.

The retiring President W. W. Case was given a rising vote of thanks.

The minutes of the last Field Meeting were read and approved.

The secretary's report was read and adopted.

It was ordered to pay the secretary \$25.00 for the coming year.

It was decided to hold another Field Meeting in one of the northern counties of the State.

The meeting adjourned, subject to the call of the Executive Committee.

ALBERT G. HANN, Sec.

National Bee-Keepers' Association

General Manager, N. E. FRANCE, Platteville, Wis.

The membership of the National today (Feb. 19) is 3600.

The revised edition of "Bee-Keepers' Legal Rights" is now in the hands of the printer. A copy will be mailed free to any member requesting it.

There have been two or more recent cases of bee-keepers sending in their dues, and asking for help *after* getting into trouble. This is contrary to the constitution. No insurance company insures burning property.

There ought not to be very much trouble in getting the desired 5000 membership by the time of the National convention of 1910. There are now 3600 members, so that only 1400 more would be necessary.

Director R. A. Morgan, of South Dakota, suggests that the National issue reports quarterly instead of annually, and save postage; also the more frequent reports will help create more interest among the bee-keepers.

Director J. E. Crane, of Vermont, thinks it would be a good thing if the National would own and rent to members stereopticon views for bee-lectures, and thus better advertise the use of honey; and also have the National advertise in papers.

Invitations for the 1910 meeting of the National have been received from Toronto, Can.; Buffalo, Albany, and Rochester, N. Y.; Nashville, Tenn.; and

Zanesville, Ohio. The Executive Committee will not decide as to the time and place of the next meeting until, perhaps, June 1st, so there will be plenty of time for other cities to get in their invitations to the General Manager before the final decision is made.

The Executive Board asks any one to report to Pres. York or the General Manager any suggestions as to how the National Association can be of more help to its members. Several suggestions have been received already, but others are wanted.

Thos. Chantry, of Utah, suggests that the dues of the National be increased so that there would be more money in the treasury, for use in the interest of the membership; and he would urge every present member to get in new members for the National.

Those who are in arrears in their membership dues are kindly urged not only to remit at once to the General Manager, but also, if possible, to get their neighbor bee-keepers to become members also. In this way the 5000 membership could be gotten within the next 60 days. Why not do it?

The poison spraying of open fruit-bloom in the Southern States has begun, as some apiaries are already affected by it. Complaints of bees spotting the washings hanging on lines in the South are coming in. The North will have similar complaints later. The long, cold winter is liable to cause

much spotting of washings when bees have their first flights. The bee-keepers should try to plan the wash days, and place their bees out afterward.

The Wisconsin State Bee-Keepers' Association was the first to join the National in a body, and has ever since continued to do so. It was also the first this year to vote to send a delegate to the National convention of 1910. Let other State and local associations do likewise, and build up both by so doing.

Up to this date (Feb. 19), since the last National report was issued, the General Manager has received \$1.00 each as dues from 80 members, and 50 cents each from 545 members. This far exceeds any other year for 50-cent dues, which shows that the local associations are co-operating very nicely. The 50-cent rate to local associations, when joining in a body, helps the National both in number of members and financially.

It has been suggested that the time and place of the bee-keepers' conventions throughout the whole country be arranged with the Executive Board of the National Association. If this is done, it may be that dates can be selected when certain officers of the National can be present at nearly all local meetings. Also, it may be that a system of meetings for the good of all can be planned something like the various State Fairs in the fall.

Honey as a Health-Food

This is a 16-page honey-pamphlet intended to help increase the demand for honey. The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last part is devoted to "Honey-Cooking Recipes" and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey, the more honey they will buy.

Prices, prepaid—Sample copy for a 2-cent stamp; 50 copies for 90 cents; 100 copies for \$1.50; 250 copies for \$3.00; 500 for \$5.00; or 1000 for \$9.00. Your business card printed *free* at the bottom of front page on all orders for 100 or more copies. Send all orders to the office of the American Bee Journal.

Langstroth Book "Special"

We have about 30 copies left of the book, "Langstroth on the Honey-Bee," of the edition just preceding the last. It is practically equal to the latest edition, and we will mail them so long as they last, for 90 cents a copy. (The regular price is \$1.20.) Or, we will send one of the above 90-cent copies with the American Bee Journal one year—both for \$1.75. Address the American Bee Journal office.

Worth Many Times Its Price.

To one who takes an interest in honey-bees, the American Bee Journal is worth its price many times over.
Tacoma, Wash. P. A. NORMAN.

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(Continued from page 80.)

like those described before. Give me your opinion as to their value, and how you would pack them for wintering.

2. Is it possible to have honey stored in supers without separators with the $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$ inch boxes?

3. The woman mentioned before said that it was never necessary to feed bees anything to winter on, because they always filled the brood-chamber before they started in the supers. According to her, if the bees stored one pound of surplus they had their brood-chamber filled. She claimed to have worked in the apiary helping her husband. Is she right or wrong?

NEW JERSEY.

ANSWERS.—1. Bees work in any kind of a thing as to choice in hives is the convenience of the bee-keeper. An important thing in deciding as to the kind of hive to use is whether it is commonly enough in use to be easily obtainable. Especially is that true if a larger number in the future is likely to be needed. If you have something that is not in common use, it will be difficult to buy others of the same kind, and you can generally buy cheaper than you can make. Also, if you ever want to sell, the sale will be more difficult in odd hives. The most important thing about the hive—the size of the frame—you do not give. If it is some odd size, it is decidedly objectionable. I had hives with frames only $\frac{3}{4}$ of an inch longer and $\frac{1}{4}$ of an inch shorter than the regular Langstroth frame, and I threw aside a hundred of them to adopt the standard size ($17\frac{1}{2} \times 9\frac{1}{4}$). Without knowing more definitely about them it is hard to judge as to your hives, but from what you say I strongly suspect that they are in a class by themselves, in which case you would do well to adopt something more nearly standard.

The hives being double-walled may need little packing. If you can get at it, the 4-inch space might be filled with leaves, shavings, chaff, straw, or other material to maintain warmth, with what is of more consequence, a packing of a little greater depth on top.

2. Yes, and for home use it is just as well. Even for a home market it may do. But for shipping to a distant market separators are almost a necessity, for without them the sections are likely to be so irregular that they will not pack in a shipping-case without interfering and causing leaking.

3. As a general proposition she is wrong. The brood-chamber may be filled before anything is stored in the super, then the bees may store a small or a large quantity in the supers, and starve before the winter is half over. For the brood-chamber may be mostly filled with brood—generally is—when storing begins in the supers, leaving empty combs when the brood is hatched out, which must have honey stored in them for winter. However, the size of the hive has something to do with it. With 8-frame hives it often occurs, especially if there is no fall flow, that bees store well in supers and then need feeding for winter. In this regard larger hives are much safer.

Marking Queens with Color—Uniting Colonies—Forming Nuclei—Boiling Beeswax—Transferring Bees.

1. Why not mark the queens with color so that they may be easily and quickly found, even in a big colony?

2. I have 2 colonies of common or black bees which I here will call "A" and "B." Colony "B" I obtained and transferred last fall from a bee-tree into a standard hive. It was a small or weak colony; but it seems to be more industrious, and more gentle and with a larger queen. And so it is my choice colony which I would like to breed from. Colony "A" is a big one. How can I best build up colony "B" in the spring to be a big one?

3. How will it do to sprinkle with flour when uniting bees?

4. How will it do to use a fine spray of water to unite bees?

5. In "A B C of Bee Culture," in the Somerford method of forming nuclei, how about that queen that is to be removed and kept caged for 10 days? Is it all right to keep her in the cage alone, or must there be several worker-bees with her? Must she be provided with food in those 10 days, such as "Good candy?" How about the temperature for her in the 10 days? Will it be well enough to place the caged queen, for instance, on a shelf in the dwelling in those 10 days?

6. When after 10 days the queen is re-

turned to her bees, will the bees accept her readily, or will they consider her a stranger?

7. If in the hives there are some brood-combs that have been transferred into the frames, and there are also some brood-combs which are built on full sheets of foundation, how may I best manage to remove or dispense with those transferred brood-combs, as they are inferior?

8. Is beeswax injured by coming to a boil? If so, can it be detected that the wax has been boiled?

9. Is it a favorable time to transfer from bee-trees during the time of fruit-bloom?

WISCONSIN.

ANSWERS.—1. I don't know of any objection. It is practised quite a little in Europe.

2. Just what is the best way depends on the strength of B. If it is very weak, able to cover only 1 to 3 frames of brood, there are two ways to proceed, either or both of which you may use. One is to take from A, a frame of brood with adhering bees, being sure not to take the queen; then to shake or brush the bees down in front of B, trusting the older bees to fly back to their old home and the younger ones to crawl into B. After 2 or 3 days the dose may be repeated, and at intervals afterward. The other way is to swap frames of brood, without taking the bees. Take from A, a frame of brood that is as much as possible sealed and swap it for one of B that is mostly eggs and very young brood. You may continue swapping in this way just as often as you can find in A frames of brood more advanced than those in B.

If B has as many as 3 frames well filled with brood, or when you have made it as strong as that, you may work more rapidly. Take from A, a frame of the ripest brood with adhering bees, and give to B. Within a week this may be repeated. After B has as many as 5 frames of brood well covered with bees it can stand having 2 frames at a time given to it. If you give bees too rapidly while it is weak, there is danger to the queen.

3. It is practised a good deal in England, but for some reason not much in this country. I think some have reported favorably, and some not.

4. I don't believe it would do very well. 5. The article in question having to do with making nuclei, little was said about the queen, only she was to be kept out of the hive for 10 days, and then returned. Generally she would probably be kept in a nucleus of perhaps 2 frames of brood with adhering bees. She might also be kept caged with a retinue of bees, candy being in the cage, or she could be in the cage alone if warm enough, say 70 degrees or more. In the latter case she might be kept in the house.

6. They are not likely to make any objection to her.

7. Merely remove them and put frames filled with foundation in place. If there is brood in the removed frames, put it in an upper story over an excluder till the brood has hatched out. Do not alternate the foundation with the brood-combs already present, but put the foundation at one side together. You will get straighter work if you put a thin dummy between the combs and the frames of foundation.

8. Bringing to a boil will hardly hurt it if not repeated too much, nor continued too long, and I don't believe the short boiling could be detected.

9. Yes, very.

Wintering Bees in a Nail-Keg—Comb Honey and Increase—Bee-Keeping in Washington.

I have a swarm that I caught last May and put in a nail-keg, and they seem to work well, filled the keg with comb, cast a nice swarm in July, and had a good flow after that, but I don't know how much honey they went into winter with; but the other day I noticed that some 12 or more bees had come out of the keg, and had chilled in the snow, and every day since I can see several come out and spin around on the snow and never get back, for the days are cold. What makes them come out? Do you think they are short of stores?

2. I have them on the summer stand with a piece of burlap wrapped around the keg, with a $\frac{1}{2} \times 5$ -inch entrance. Do they get enough air?

3. If they are short of stores can I feed them? How is the best way?

4. If they were in a frame hive I could soon see if they had any honey. I want to

transfer them in the spring. When is the best time, and how is the best way?

5. I want to run for comb honey and get all of it I can, and get all the swarms I can. How is the best way to manage it?

6. Would you use the 8 or the 10 frame hive?

7. We have a very good honey-flow here. It lasts about 8 months, from June 1st to the last of August. We have a milk-weed that is very nearly as good as white clover, smells like clover, and the honey tastes very much like it, but not quite so white. Then there is some alfalfa raised here, and more sowed every year, so I think this will be a good bee-country after a while, for it is new now. Is there a bee-keepers' association in this State, and where are the headquarters?

8. What books would you advise for a beginner?

WASHINGTON.

ANSWERS.—1. The bees coming out as you say, spinning around and dying on the snow, is no sign that anything is wrong. If they were starving they would die in the hive, or at the most they would get no farther than close to the entrance. More or less bees always die through the winter.

2. That ought to give enough air.

3. It's a troublesome thing to feed them; but you can put some comb honey under the combs on the floor, and the first day it is warm enough they can take it.

4. Wait till they swarm, have the swarm in a movable-comb hive, setting it on the old stand with the nail-keg close beside it. A week later move the keg to a new place, perhaps 10 feet away. Two weeks later still, or 21 days from the time the swarm issued, all the worker-brood will have hatched out in the keg, when you can cut up the keg, brush the bees into the hive containing the swarm, and melt up the combs. Instead of this, however, as you probably want increase, you may, at the end of the 21 days, cut out the good combs and fasten them in frames as directed in your bee-book, and transfer bees and comb into a new hive.

5. If you get all the honey possible, you will not have any swarms, unless you are in a locality where the season is long and there is a heavy flow late. If you have as many swarms as possible, you will not expect much honey. Perhaps the happy medium will be to double your number. When a prime swarm issues, set it on the old stand with the old hive close beside it; move the old hive to a new stand a week later, and that will throw the field-force all into the hive with the swarm. That will make the swarm strong for a crop of honey. If you are anxious for more increase and less honey, when the prime swarm issues hive it and put it on a new stand, leaving the old hive on the old stand. Then, if the colony has been strong, you may have another swarm from the old hive about 8 days after the first swarm. Set this second swarm on the stand of the old hive, and move the old hive 10 feet or more away.

7. Write Legh R. Freeman, N. Yakima, Wash., who will be able to tell you about the Washington State Bee-Keepers' Association.

8. Dadant's "Langstroth on the Honey-Bee," Root's "A B C and X Y Z of Bee Culture," and Cook's "Manual, or Bee-Keepers' Guide," are all good. After one or more of these, may come any of the other books advertised on another page of this paper.

Cellar-Wintered Bees—Milkweed—Bees Superseding Clipped Queens—Eggs that Disappeared.

1. Last winter I had my bees in the cellar with a bottom-board $1\frac{1}{4}$ inches in depth of opening under the hives in front, but with it all closed except about $1\frac{1}{2} \times 3\frac{1}{2}$ inches, with wire-nails placed close enough together over the opening to keep out mice. I had also a cork hole less than an inch in diameter in either the front or back end of each hive about 1-3 from the top, closed with a mouse-proof tin stopper in 10-inch deep Danzenbaker hives, with the frames set crosswise, and lost none by wintering in the cellar under the living room of the house. Although this winter has been very mild for Ontario, Canada, till now (February), I can't keep the cellar so warm as last winter, and have had it down to 41 degrees a couple of times, and from that to 45.

I should have said that last winter the cotton covers were mostly free from propolis, and over these 4 or 5 thick quilts, either of felt or cut from bed-quilts, covered with weighted wire or zinc screens to keep out the mice.

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This year I have taken the plan given by Doolittle and left the opening all the way across on the bottom-board, about 14x1 3/4, with 3/4-inch galvanized wire screen mouse-protector, and the cork-holes closed entirely. All the hives have the same quilt covering now as they had last winter, only the propolis was not removed from the cotton summer covers, but they were moved too late for the bees to seal them down, and these are covered over all with the Root 3/4 zinc-bound "honey-boards."

Now, why is it that under the board covers the quilts are quite cold? Not the slightest heat can be detected over the cluster. I examined only 2 in the top row on the east side of the cellar that were easiest to get at. The bees on the west side of the cellar make less than half the noise of those on the east side. I suppose because the cooking stove is within 3 feet of the top of the hives on the east. Are the quietest bees not wintering the best? There are not so many dead bees on the floor as at the same time last winter. I examined some of them with a lamp, holding it close to the entrance, and not a dozen dead bees were on the bottom-board, and not a bee came out in the few seconds I was there. Are my 14x1 3/4 entrances too large? Probably they are more than 4 times the size of Doolittle's, but they can't be as bad as those hives wintered with no bottom-boards at all, all open, set upon a 4-inch scantling, and come out fairly well. I could partly close the slide easily, instead of having it removed entirely, as it is now.

2. When I tried incubating, as I informed you, with a lamp under a hive, in the house, with exit under the window in the spring of 1908, it worked well, because any extra heat escaped into the room and did no harm, but in the spring of 1909 I put a lamp in a hole dug in the ground, surrounded it with a topless and bottomless box and set 4 hives upon it for a top, but I could not keep the heat low enough without having the lamp go out, and after moving them to proper stands when the weather got warm, only the weakest colony of the four did any good. One of the stronger ones swarmed before its time, from too much heat, but the swarm and the other three did not, all together, give more surplus than the weaker ones. Buckwheat and goldenrod gave most surplus unless the large milkweed helped. I saw many bees working on it and some of them would sit on its leaves as if they were half asleep. Did you ever have any experience with this milkweed? It is getting to be more of a nuisance every year.

3. I was reading in the last Report of the National Bee-Keepers' Association, first column of page 54, that a Mr. Bernsheim said he always loses half his clipped queens by superseding in the spring. I have always clipped my queens, and have had the same trouble at other times of the year, but last spring the queens were killed at the most critical time, when they should have been breeding for the white honey-flow. Is this a usual thing for the bees, to kill clipped queens? I have long been trying to account for the loss of so many queens by superseding, and I think I told you of it once. This has happened so often that all my bees are hybrids, though buying queens every year. If you tell me this is usual I shall clip no more, except as an experiment. Every bee-keeper should join the National to get its full reports, as the bee-papers could not publish the reports in full even if they tried, and the General Manager, N. E. France, of Plattsville, Wis., is such a splendid, enthusiastic man.

4. Lately I tired of the way some dealers in Italian queens humbugged the people by making them believe that the filthy combs frequently built by Italian bees were caused by "travel-stain," as they call it, when it is caused chiefly by the Italians mixing in pieces of old, dark comb with new wax in building new combs, so I decided on trying Carniolans that are reported to build white combs. I procured some Carniolan queens in October, one of which I introduced as follows, on some one's recommendation in the papers:

I first smoked the bees heavily below, and closed the entrance, then pounded on the hive to make them fill themselves with honey, and then laying a large board in front of the hive-entrance, I shook off all the bees from the combs on to the board and let them run into the hive, and they soon collected on the combs again that had been returned to the hive, and the queen had been dropped amongst the bees outside the hive and ran in with them. In a few days there were eggs in part of one comb and soon after no eggs or larvae were visible, and in a few days after there

were more eggs, but these also disappeared shortly after. What became of these eggs? Did the bees destroy them because it was too late in the season to rear brood, or what? "I don't know." Probably you do.

NOVICE.

ANSWERS.—1. You are to be congratulated. Your bees have such an abundance of good air of the right temperature that they do not need to make any stir to change the air nor to warm it, so they are so nearly dormant that you can feel no heat over the cluster. What more do you want? Of course, the quieter the bees are, the better. My hive-entrances are 12 1/2 x 2, making 24 1/2 square inches. Yours are 14 x 1 3/4, or 24 1/2 square inches. Your entrances are all right. If you want to warm your hand over the cluster, make the entrance so small that the bees will have to ventilate to change the bad air, and the effort to ventilate will help warm your hand. Or, lower the temperature of the cellar below the freezing point, and the bees will have to stir themselves and eat a lot of honey to warm up the cluster, and then it will warm your hand on top. Sounds contradictory to say that cooling the cellar warms up the cluster; but it's about the same as saying that as the weather gets cooler the fire in a sitting-room gets hotter.

2. Milkweed is rather plenty here, and I think I have seen a very few sleepy-looking bees on it, but the greater trouble is that sometimes the bees are thrown out of business by having parts of the flower stick to their feet. The Chapman honey-plant is the worst I ever knew about having a number of bees sit stupidly upon it.

3. I think every one who begins clipping queens will be surprised at the number of queens that are superseded. It is not that any more queens are superseded than before he began clipping, only while wings were whole he could not well tell whether they were superseded or not, and when he finds a queen with whole wings in place of a clipped one he knows there was superseding. Ask him how many of his queens were superseded before he clipped, and he might answer, "I don't know, but I don't suppose one in twenty." The actual fact is that in the regular course of nature every queen is superseded. I have clipped for a great many years, and have had a good many old queens, and I don't believe I ever had a queen killed because her wings were not whole.

4. I doubt that Italians are worse than others about taking bits from their old combs to put into new. At any rate I've had blacks and near-blacks that were just as bad.

I think it is the usual thing that a queen continues laying at least a short time after the bees stop rearing brood from her eggs. But bee-keepers don't often notice it."

A Big Bunch of Bee Questions.

1. Can I take bees without a queen a distance, give them a frame of brood with a queen-cell, and get them to stay and increase to a full colony?

2. I made a hive the other day that has 8 rooms in it, 4 frames to the room, only one room has 10 frames. Over each 4 brood-frames are 4 honey-frames on top. The 10-frame room is to run for honey and drones, so they may have a better chance at the queens. Will that hive be a good one to rear queens in?

3. There are no black bees within a mile and a half of me that will interfere. As I use drone-traps do you think I will ever have a good stock of Italians?

4. Are hybrids as good for honey-gathering as full-bloods?

5. In caging cells, one cell in a hive, with no queen, will the entrance of the cage have to be closed to keep the bees from tearing it out?

6. A bee-friend says a pound of honey will go as far with a colony of bees as 2 pounds of granulated sugar for winter. Is that so?

7. He says the workers lay the drone-eggs. Is that so? I thought the queen laid all the eggs.

8. He has 50 colonies and has had bees 20 years. I have 10 colonies and have had bees 2 years. He says he thinks the bees know when a queen gets to be too old, and will rear a young queen when it is needed, whether they swarm or not. Another bee-keeper with 40 colonies said he had a box-hive with a queen that had been in it for 20 years. I believe they are both mistaken. What is your idea?

9. Can I confine a young queen in a hive

and have her mated without taking a flight? 10. Will it make any difference for me to get golden Italians and red-clover Italians, and let them mix, or would I better keep only one kind?

11. Which of the two kinds mentioned do you think better for my locality, and will the Italians beat here? Our chief honey-plants are poplar, blackberry, cherry, locust, sumac, white clover, raspberry, catnip, bitterwood, maple, buckwheat, etc.

12. If I cage queen-cells, must I hang them as they were in the hive, or can I lay them down in the cage?

13. How many can I cage in a queenless colony and have the bees feed them as they should?

14. How is the best way to make queen-candy if I should need it for my yard, as I am going to rear my own queens if I have luck.

15. I have 10 colonies of bees and want to increase to 28 this year. I can buy prime swarms for \$1.00 to \$1.25 each. Would I better let mine run for honey or let them swarm once each? Chunk honey is 10 cents a pound here.

16. I have Italians and blacks. I want to get pure Italians and keep them, and also keep pure blacks. How will I manage it?

17. I am going to move some of the blacks to an out-apiary, but do not want to move all. Can I catch and kill all the black drones in the home apiary, and rear my Italian queens in July and August? How would that do?

18. What good are drones to a colony that has a mated queen? Will it hurt if I kill all drones in such a colony?

19. What is the gentlest race of bees you know of?

20. What race of bees has the longest tongues?

21. What is the best way to select a young queen before her brood hatches?

22. Which is the safest way to make a living, to work with bees or to run a farm? Which way will one have the best time?

23. I run my bees for extracted honey. When I don't find sale for it, how will it do to let the honey stay on the hive till I do find sale for it? How will it do to put a wire-screen over a strong colony and pile up the supers over this?

VIRGINIA.

ANSWERS.—1. If you move the bees a mile away, or imprison them for 3 days, if you take enough bees, and if it is a good enough season, you might succeed.

2. I'm not sure I understand just how the hive is made. I suppose several nuclei are to be kept in the same hive, separated by bee-tight partitions, in which you expect to keep young queens to be fertilized. If the entrances are so arranged that there is no danger of the young queens entering wrong compartments when returning from a wedding excursion, the hive ought to be a success. But if you have 4 full-sized brood-frames for each nucleus, there will be little or nothing gained. I question your idea about drones.

3. You may if you get a pure queen now and then.

4. Very often they are.

5. If a cell is given before the bees realize their queenlessness, they may tear it down; not afterward.

6. For wintering, a pound of sugar will go farther than a pound of honey.

7. In a normal colony the queen lays all the eggs. In a colony queenless long enough, laying-workers may appear, and their eggs will produce only drones.

8. Your friend is right about bees replacing a queen without swarming, and that is what took place several times in that box-hive, no doubt, for a queen generally lives only 2 to 4 years, and I never heard of one living more than 5 or 6.

9. No.

10. Generally it is considered better to keep only one kind; but a cross often does better, at least for a time.

11. Likely there is little or no difference, although if the red-clover bees are really what their name implies they ought to be the better in a red-clover region. Likely Italians will beat the blacks.

12. You may safely lay them on the side.

13. I don't know, but I suppose a great many.

14. Stir powdered sugar into warmed extracted honey to make a very stiff dough. After standing a day or two, if it becomes thin, knead in some more sugar.

15. At the prices you name, better produce all the honey you can and buy prime swarms.

16. Keep each kind in an apiary by itself, 5 miles away from any other kind of bees.

17. That ought to answer; only remember

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that there is some chance of mixing at a distance of 6 miles or more.

18. No use. All right to kill them.

19. Caucasians have that reputation, although Root says they are no gentler than some strains of pure Italians.

20. Perhaps Cyprians.

21. I don't know of any way to judge except by her looks, the way she fills the frames with eggs, and the stock she comes from.

22. Most men will probably be safer as to a living on a farm. The man who is thoroughly qualified for it may be safer with bees. Such a man, with a strong liking for bees, will have a better time with them even if he should not make so much.

23. It will be all right to leave it on the hives until the weather becomes too cold. But if you use a screen, so the bees can not get to the honey, the moths will probably have "a high old time" with the combs.



Lots of Snow—Fair Prospect

There is lots of snow here this winter. The prospect is fair for honey the coming season. J. E. CRANE.

Middlebury, Vt., Feb. 26.

Seem to Be Wintering All Right

My bees were put in winter quarters Dec. 3, 1909. They are weak, but they seem to be wintering perfectly thus far. There are no signs of disease yet. H. W. LEE.

Pecatonica, Ill., March 1.

A Very Cold Winter

We have had a very cold winter here. The bees have been under snow about 2 feet deep. The snow has gone now, and the bees flew today. Out of 15 colonies I have only 3 left. JAMES H. KNOTTS.

Tunnelton, W. Va., Feb. 28.

Bees Seem All Right

I have 80 colonies of bees, all in the cellar. They seem to be all right so far. The season of 1909 was a very poor one for honey in this part of New Brunswick. There was no surplus honey to speak of. Bees were put in winter quarters quite light in stores. I hope they will come out all right. GEO. F. BEACH.

Meadows, N. B., Canada, Feb. 21.

Bees Seem to Winter Well

Last fall I had 42 colonies of bees, and they were left on the summer stands. Today it was warm enough for them to fly, and they all seem strong yet. But I cannot say how many may die before the winter is over. I hope this year may prove a good one, as we have had three bad seasons for bees. MARTINSVILLE, Ind., Feb. 15. J. A. LEWIS.

Coal-Oil to Keep Ants Away

The best way to keep ants from bees in summer is to plant as many posts in a row as needed for the hive bench to sit on, and then dig out a hole as large as a peck measure and cement it and fill the hole about $\frac{1}{4}$ full of water, and pour coal-oil on top of that, as much as a half-pint in each hole, I think all who try this will find it all right. WILLIAM H. CLARK.

Sperryville, Va., Jan. 6.

Distance Bees Fly for Honey

I saw in the January American Bee Journal an article written by L. B. Smith, as to how far bees fly. I will tell of a little experience. Last fall, one warm day, my father and I went out towards the mountain bee-hunting. We came to an open place on a ridge that led to the mountain, where we put out some bait. In about half an hour we heard the buzzing of the bees, and sure enough one lit on the bait. So we watched

the bait for several hours where we first put it out, and in that time we had several dozen bees on it. But we were unable to tell in what direction they were going, as they circled so high in the air we could not tell which way they led off. However, we supposed they flew towards the mountain. So we commenced to move the bait towards the mountain, the direction we thought they were going, and finally we started up the mountain, still moving the bait, time after time, until we got towards the top, when we commenced to see which way they flew, as they did not circle so high, and they led off to the top of the mountain.

We continued moving the bait, and the farther we went the more bees we had, until we got to the top, when night overtook us and we had to start for home.

The next day being my regular huckster day, I could not go back, but the next day we went to the top of the mountain where we left off. We put out some bait, and in a short time we had lots of bees, and they flew right down the other side. We commenced moving down the other side until we got down in the other valley, where we found them in an old oak-tree. I feel confident in saying the distance from where we first put out the bait to where we found them was between $\frac{3}{4}$ and 4 miles, as it was from one valley across a large mountain into another valley. So I believe in a time of scarcity they will fly as far as Mr. Smith says; but as to the amount of honey they will store I am not able to say, as that one had only about 2 pounds of honey. However, we have had a terrible drouth and pasturage was scarce. I hope to see this subject more fully discussed. T. A. CRABILL.

St. Davids Church, Va., Jan. 25.

Bees Long Confined to Hives

This has been the closest and longest that my bees have ever been confined to their hives. They haven't had a flight for 8 weeks. They are on the summer stands wrapped in painted canvas, well protected from rain and wind. I can hear them humming in the hives. How do you think they'll pan out in the spring? We have 18 inches of snow this winter. It is an old-timer, away back in the 50's, and still snowing. I am anxious to see the bees out. Is it prudent to let them out on the snow, or should I keep them in the hive until the ground gets bare? I would like to hear from other bee-men.

I put 23 colonies away, and am waiting patiently to see the outcome of the close, hard winter. C. H. MANGUS.

Altoona, Pa., Jan. 31.

Cold Winter for Bees

I have been at bees for 30 years, keeping only 8 or 10 colonies, as I never allowed myself to have enough colonies to interfere with my pastoral work. And for that reason, and because I have never gone into serious commercial honey producing, I have kept to comb honey.

I have been pastor here 11 years. In that time I have not failed to get 100 pounds of comb honey in Danzenbaker sections every year, per colony, until 1909, when all was black honey-dew—not a single section of clover, basswood, or other white honey. And now this is a very severe winter on out-door bees, since many feared to house them in the cellar with no chance to fly when they had no stores but honey-dew.

All this long lying snow will be good for 100 clover, but I believe many bees will be lost this winter between honey-dew and cold continued so steadily that they cannot warm up and eat, to say nothing of taking wing. We have had 6 weeks of unusual cold here. (Rev.) T. CHALMERS POTTER.

Glasgow, Del., Jan. 18.

No Trouble in the South from Granulation of Bulk-Comb Honey

In the January number of the American Bee Journal, page 13, Mr. Greiner, in commenting on our Texas bulk-comb honey-production, seems to think we would have some trouble with our honey granulating while in the pail or receptacle, and "that he would be a little skeptical in filling the interstices with extracted honey." I have been selling bulk-comb honey since 1884, and have never had any trouble along that line. In fact, our honey does not granulate until the cold weather sets in, and I have never been able to supply the demand for nice comb honey during the summer and fall months, for it is invariably all sold out before the weather

becomes cold enough to granulate our honey. I have known a few grocers to buy in 5-gallon cans, and set it away out of sight of their customers and have it granulate, but when put up in one or one-half gallon tin-pails, and put where it can be seen, it is all sold before it granulates.

If Mr. Greiner will fill some of his pails with honey without filling the interstices with extracted honey, and show it to his customers, he will soon know which sells the best. They like it "soppy," as they call it.

The most salable receptacles are half-gallon and gallon buckets made of very light tin, as that kind is the cheapest, and can be sold at the same price per pound as the honey. Some of our bee-men use quart and half-gallon fruit-jars, but unless the combs are cut in very small pieces, they are hard to get into the jar, and much harder to get out. Also, the jars cost so much more than the tin, and are more easily broken.

Besides all these advantages that the bulk comb has over section-box honey, we are not bothered with so many fixtures in its production. Only a plain, shallow extracting super, with a 1 or 2 inch starter to each frame is all that is necessary; and, also, I find it so much easier to get the bees to work in these shallow frames than in the little 1-pound boxes.

I also found it much easier to get the bees to work in the 2-pound boxes when separated with slatted separators, instead of the slotted or scalloped separators. The little slats are fastened at the ends by tin strips bent over the ends of the strips. This gives the bees free access to all the boxes, and they do more storing than they otherwise would, unless the separators are left out altogether, but we frequently have had a bad mess of it without the separators.

I get the bees to build comb and store honey in these shallow frames when there is a light flow, and then they will not start in the deep frames.

I use the common Langstroth frame in the brood-chamber, and with the 16-frame size I seldom have brood in the supers. When I do, I use the combs for extracting, which are light and easily handled.

Our bees are carrying in pollen now from the chaparral and cedar, and as the plum buds are swelling, the bees will soon be at work on them.

The rest of Mr. Greiner's article on winter packing does not interest me this far South, for we never need to do anything of that kind here. D. F. MARRS.

Lorena, Tex., Feb. 6.

Honey-Dew—Discouraging Outlook

This has been one of the worst years I have ever experienced in bee-culture. No honey, but some black stuff that looks like tar, and if there is one colony out of 20 living next spring, I will be surprised, as they have not flown since the first of December. Those that did not feed their bees will be beeless when next spring comes, and have a lot of depopulated hives. Nobody got any honey, so they have no honey for their buckwheat cakes this winter.

The bees did a lot of swarming in June, and the swarms were all dead before the cold weather was here. The outlook is not bright for the bee-keeper next spring.

I would be lost if the American Bee Journal would not come once a month. It is all right. I like to read, even if I have no honey to eat. HENRY BEST.

Hibbetts, Ohio, Feb. 8.

Why Are These Things So?

In answer to G. M. Doolittle's article on "Why Are These Things So?" I would say because there are too many small producers of honey, mostly a class that, if they got a good crop of honey one year they will dump it in their home market for "any old price" the groceryman offers them, and then say, "Well, I have made so much on my bees this year." The cost of production is never figured. Some bring a first-grade of honey to market, and others not so good, and suppose they sell it for 10 cents a section, or 11 cents a pound for comb honey, as has been done in this town, you will readily see that a first-class article will have to go begging for 12 $\frac{1}{2}$ cents a section, or 15 cents a pound for comb honey. Then we must always bear in mind that the more people there are producing any one article individually, the harder it is to keep the price up.

If we look back to the years gone by when you could almost count all the practical bee-men on the tips of your fingers, and they had the field to themselves, then you could

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make something on honey. I myself have sold a fancy or best grade of section honey for 15 cents per section to the retailer not over 5 or 6 years ago, but the price is down now, and is likely to stay there for these reasons:

First, too many in the business; second, no combine or union; third, some States can, or do, produce honey cheaper than others; fourth, selfishness and mistrust also hinder a producers' union. Please bear in mind that I am not in favor of any combine or anything else that helps one side and crushes the other. A combine is one way to get better prices, but how are we going to get it?

The other way is to fall out; that is, to keep right on the same way producing honey until we find out that it is done only at a loss all the time, and quit the business. Then you will see the price go up again to a profit.

You say, see the price of eggs, butter and beef. I tell you, it did not pay to produce them, and the farmers went out of them. When grain went up they went to raising what would pay better. I, for one, had to quit the poultry business when grain went up to the high prices where it is. Although I am equipped to accommodate 800 layers, I don't think that I would quit until I had to. Maybe I will have to go to saving, so you will see that the trusts are at the bottom of it all.

Take the beef-trust for one. The investigation says they are entitled to a 15 percent profit, so I understand. Whether that is once a year or on every transaction I can't say, and I rather think it is the latter. Look at the enormous profit, and if per annum it is still greater than the law allows a money-lender.

I will say there is yet a living price for me in the production of honey, or in other ways I get out of it all I put in, which I did in the poultry business.

I hope that the spirit of good fellowship will enter every man's heart, and that God will bless us and our bees.

LEWIS A. OERTEL.

Gloversville, N. Y., Jan. 28.

Poor Season in 1909

Last year's honey season was a very poor one in this part of the country. There was no white clover honey, though considerable blossoms, but the bees paid no attention to them. There was lots of honey-dew, and a little white honey in the fall. The winter losses of the bees are very heavy.

Rushville, Ill., March 2. W. E. MASON.

Apiarian Experience and Admonitions

I have kept bees in a small way for a period of about 20 years, and will give some of my experience, and try to give some admonitions that ought to be a benefit, especially to the beginner or those contemplating bee-keeping.

As intimated, I have never been an extensive bee-keeper, but have kept from 6 to 45 colonies in connection with farming, and for the benefit of those contemplating bee-keeping. I will say that in proportion to the amount of capital invested and time consumed, my bees have paid as well as or better than anything else on the farm, besides furnishing to me pleasure and an experience worth many dollars.

I have kept bees in three States: First when a young man in central Illinois, when I supposed all one had to do with bees was to have the swarms and "take out" the honey (and it is a fact detrimental to bee-keeping, that a great many who keep bees still have the same idea I had then); second, in central Arkansas; third, in Kansas; and at last I have again got back to Illinois within 100 miles of the beginning place. So last fall I bought 9 colonies of bees as a starter, and being very busy and getting very sick later, I neglected to fix them for winter, as I had anticipated (and which no bee-keeper should neglect), and as the cold has been severe and continued, I fully expected my neglect to cost me the price of the bees. But since the weather has moderated, I find they are alive, even to a late swarm that is in a double-walled hive, which had only about one-fourth of the brood-chamber filled with comb, and which I had aimed to unite with a colony last fall. As they had fared so well I concluded to try to save them so as to have the queen in the spring, so I fed them a few pounds of sugar syrup a few days ago. And here it might be in order to admonish the beginner, who perhaps did not take the pains to see that each colony had an abundance of stores last fall, that when he can catch an occasional warm day, it would be a good time to peep into a few colonies late each

evening (so as not to excite any robbing) and feed any colonies that might be short of stores. Perhaps some of the best colonies stored about everything in the super, and when you took that off they had about half enough to winter on, and so may perish. Many of the best colonies are lost in this way by the careless man. A very satisfactory way to feed them is to slip out 2 or 3 frames and fill one side with sugar syrup. You can use less frames by filling both sides, but lay the side you have filled over an empty frame while you fill the other side. The worst objection to this method is it is a little hard on the man who wants to sell his bee-feeder. There is danger of the beginner thinking he must buy everything advertised before he can keep bees. When I first went to Kansas I supposed I could not keep bees unless I had a cellar or double-walled chaff-hives. But during a term of 7 years I wintered my bees by putting a cheese-cloth over the brood-frames, and then put on the super filled with dry leaves, and made a wind-break of fodder on the west side. I did not lose a colony in 7 years by this method, and we had as low as 24 degrees below zero. So to any bee-keeper no farther north than a line running through central Kansas, Missouri, Illinois, and so on, this is as much expense as he really needs to go to in order to winter his bees successfully in single-walled hives on the summer stands.

Here it might be interesting to note that the only colony I ever lost from cold was in central Arkansas, the cause being we had a cold spell of unusual length and severity for that climate, and the bees could not break the cluster to get to a new supply of honey; and having consumed the honey on which they were clustered, they perished surrounded by plenty of stores. This was the best colony I had in a lot of 40.

Moultrie Co., Ill.

E. G. HANNA.

Chunk Honey—Bees Wintered Well

I notice in the discussion of chunk honey, one writer said that he believed the dealers in bee-supplies were discouraging it in order to sell goods. We don't like to hear people slandered that way. Such is not the case in this country, at least. We have two customers who like the chunk honey, but the majority claim it is not so neat for the table, and they dislike to have the candied honey which is in the bottom of the vessel. We try to have some chunk honey each season, but last year was almost a failure with us of any kind.

We have the section-holders with a strip of wood on top, and by taking thin super foundation one can put in a starter. My brother made the pieces first; they can be used for several years. These pieces of honey can be put in a tight box, and kept just as easily as in sections. We find that there is from a pound to a pound and a half more on one of these strips than in four sections, but, of course, one must try to please people, which, sometimes, it is hard to do.

We have 43 colonies, but as the white clover was so near a failure, and we had an early frost, our bees did not pay expenses; but they have wintered well, and we are expecting to make something another season. Had it not been for the honey-dew we would have been compelled to feed our bees in midsummer; as it was, we fed only 120 pounds of granulated sugar.

OLLIE GREEN.

Worthington, Ind., Feb. 21.

Last Season Too Dry—Starting New Bee-Keepers

The season of 1909 the spring flow was good, but the fall flow was the poorest we have had in a long time. It was too dry. I did not have to feed any; some of the best colonies filled one super, but if it had been a good season they would have filled 3 or more, or an average of about 40 pounds each from the fall flow. The spring was the same.

I work for honey only, both comb and extracted. I have 10 out-apiaries, and expect to make more increase. I have a good home market, and it has outgrown my supply. I think I will keep more bees and try to supply the home market.

I hope Mr. C. L. Grigsby, of California, will give the readers the description of his non-swarming methods, because the swarming season is on us; it will start here the latter part of next month.

I hope a more experienced bee-keeper than I will give us an instructive talk on the advantages and disadvantages of encouraging more people to keep bees. I have had some sad experiences in getting some people started. They did start—that is all. They got the best of hives and fixtures, but did not

have time to read a bee-paper, or any of the bee-books, and have never studied anything on the subject. They said that it was no use; they had all the good, nice honey they could use, and some to sell. They just had the common black bees, and thought they were good enough, and that they could not afford to pay \$1.00 or more for better stock. He may sell a few sections of comb honey, and, not knowing the market, let it go for less than it is worth, and it may not be graded right, and so hurt the market which we have worked so long to build up.

And, again, you have a home yard, and most likely you have some of your best queens there; you have worked for years to weed out the old box-hives and black bees for 2 miles around, and over, so that you can get almost all of your queens purely mated, and have an ideal place to rear queens for the out-apiaries. You have succeeded in doing so at no small expense; this is worth remembering, and as all preparations are made to requeen all your out-apiaries from your home yard from some choice queens, you are looking into the future and thinking you are in shape to do something in bee-keeping. You already have as many colonies as your location will support; but, behold, unexpected to you, here comes one of the "bee-keepers" that you have given some encouragement, with almost a dozen colonies, and puts them within a stone's throw of your apiaries. Of course, he has the right, and you can't help yourself. He has black bees and does not want any better, and does not know that there is a way to improve the stock. Try to get him to buy some good queens, and he will just laugh, and say that his bees make as good honey as yours do, and about as much. I can't see anything in that for me.

The above is from experience. I would be glad to hear from others on this subject. I say, give us better bee-keepers, and those who depend upon bees for a livelihood. There is not one bee-keeper in 40, through this section, who reads a bee-paper. What must be done?

JOHN W. CASH.

Bogart, Ga., Feb. 21.

Transferring Bees—Do Bees Reason?

Last year was not a very good one for me. I secured about 35 pounds to the colony and increased from 8 colonies to 16, and doubled back in the fall to 11. The fall flow was very light. Bees stored very little over enough to winter on, but the prospects are good for this year. White clover is looking fine at this time.

I had quite a funny experience last summer. I had 5 colonies in box-hives to transfer. I transferred, or tried to, at least, one of them, and could not find the queen, so I opened another one, and did not find a queen in that one, but lots of eggs and brood in both, so I put all in one hive, but the bees all left and went to the other hives, so the man that they belonged to transferred the other 3 the next day, and out of 5 colonies he got only 2 medium colonies. But after I went into the first one I knew it would not do to transfer them, for there was very little honey coming in, but he had bought the Langstroth hives and would have them changed, but it was a bad job. It was the worst luck I ever had. I have made many changes, but those were the nearest to a failure I ever made.

DO BEES HAVE REASONING POWER?

I have seen this question in some of the bee-papers. I do not say they do or not, but I have taken notice of bees going to an old location and then going straight to the new one. Last summer I had 2 colonies on top of a house and moved them down on the ground about 100 feet away. It rained 2 days after I moved them, and for 4 or 5 days after they were moved I noticed bees coming to the old stand and circling around, and then going direct to the new location. Whether this is reasoning or instinct, I do not pretend to say. I would like to hear from some one who is better informed.

The bees in this locality have had a flight about every 10 days or 2 weeks all winter. I do not know what condition they are in, for I have not looked inside of any of them yet, but can soon. Soft maple begins to bloom here the last of this month.

Princeton, Ky., Feb. 5. L. S. DICKSON.

Bee-Stings and Rheumatism.

On page 419 (1909) Mr. J. D. Kaufman has something to say about bee-stings and rheumatism. He also gives us a query as to the riddance of vermin from his live stock.

With the creation of a cause, birth is given

American Bee Journal

to effect. In the early seventies it was customary, in Wyoming, to rid wearing apparel of vermin by tossing the garment on a den of those big ants. Next morning the garment was free from the pest. Maybe the same cause produced the desired effect with his swine and collie. Again, maybe mica or alkali, or both, had something to do with the effect.

Here is one for the man of the Big Basin to crack: He says it is a long while since he saw an old fogey who pinned his faith to bee-stings as a remedy for rheumatism. I shall relate effects from my own experience. Maybe he can tell why it was that "Uncle Joe" got relief from the old pest—rheumatism.

In my younger days my occupation was that of mining coal. For 20 or more years my associates were those strong-armed and big-hearted fellows, who were not afraid to go down into the bowels of the earth and wrest from it the much-needed article—coal.

While engaged at my occupation among white and black damps, fires, and gas, mud and water, and such as the miner has to contend with, a something got hold of my arms, between the elbows and shoulders, which refused, many a night, to let me sleep in any position except with arms crossed above my head. The doctors told me it was rheumatism. I have good recollections, too, of their saying they could cure me. I paid the price, took the dope, and retained the plague, and now the family physician says no relief through bee-stings. They can fool me once, but not all the time. As we boys, years ago, would say, "More ways than one to skin a cat." Allow me to describe the first method of "skinning the cat," after the doctors had "skinned" me.

You should know coal-mining is a dirty occupation, a good place for perspiration and dust to mix and cling to the one who created the mixture; we needed a bath each evening, which needed to be taken with more than a grain of soap. How good and refreshed we felt after a good wash and a suit of dry duds on our tired bodies. When complaining to my good old mother-in-law about those sore, rheumatic arms, she told me that many a healthy baby was washed and bathed into a frail, puny condition; try less arm-washing. I did so, by omitting arm washing except Saturdays. One week's treatment and I had relief. Cheap, wasn't it? and easy, too; but hard on the washerwoman. To convince myself, I would return to the old way of washing arms, and so would the old pest return. Not a few times did I fit back and forth with the problem, but always with the same effect. I told others similarly afflicted, of my remedy. They would laugh, of course, just as you now are doing, but the torment was such that they gave it a trial. All reported relief. Who will tell me why it was so? Don't all speak at once. Let me say that, as a rule, the coal-miner is a clean man when not at work. I have read of one doctor who said the people bathe too much. With my experience I pin my faith tighter to that doctor than I will to the doctor who says bee-stings have no effect on rheumatism.

In the latter period of my under-ground experience, say some 6 or more years, I had no arm troubles, nor did I wash them oftener than once a week. Then through some hook or crook it came about that "Joe" was to toil on top of the ground instead of under and in it, amidst sunshine, birds, and bees, and the idea that "Old Joe" was to be where he could see the sun all day—well, if it was "Joe," he had lost his kit, if it wasn't "Joe," some one had found a blooming coal-digger, and here I am giving my bees the benefit of what was created along some lines while digging coal, the benefit of a well-regulated air-course across the bottom-boards with both ends open, which will furnish them with all the pure air they need while toiling for me and storing in my supers.

I got to be considerable of a clodhopper on the farm, but my old plague returned. What to do I knew not. I had no faith in the doctor's remedy, and my own I could not make use of, as wife said I had got so I didn't wash enough, so I grinned and bore it for a few years when (come, listen, you man from the Big Basin, also Dr. A. F. Bonney) "Joe" got acquainted with the bee, and he got stung unmercifully, too, for Dr. Miller had a standing order those days for the beginners, that the best remedy for a sting was a good stinging. I always believed in obeying orders, and I took the stings, and soon got relief from my plague in my arms, call it what you like.

After some five or more years I got wise; also tired of Dr. Miller's remedy, and took to protection along exclusive lines. I got practically no stings at all, but I did get a gentle hint of the return of the old Pest, and had him with his spurs on, too. Then a year ago

the past summer I resorted to Dr. Miller's suggestions again, took the remedy in no small doses, either, for I had a whole yard of the demons ready to help drive away the plague, and "Joe" along with it. That summer I again got relief, and the past summer I saw to it that the protection was scant, and today I feel like—well, should a man come onto my place hooting the idea of the bee-sting being good for my kind of rheumatism, I believe I'd set the dogs on him.

The first summer with the bees my hands reminded me of a standing shaft in the mines, all there in one solid chunk, but tight between top and bottom. So after the last experience I am like the Indian who rescued the commander's daughter from an adjoining tribe who held her in captivity. When the rescuer returned her to her father, the father said, "John, I'm well pleased with your doings. You may make three requests and I'll grant them." John said, for first, "I will take whisky." "All right John, you get all you want of it as long as you live." For second he asked for tobacco, which was granted. For the third he said he would take more whisky. So if all are willing, I will take more stings and less of that pest. If the honey diet should afford relief, why did the pest return when I was eating it constantly? When we become positive a thing won't rope we should know what rope does, especially when the rope has the critter fast.

J. P. BLUNK.
Moorland, Iowa, Dec. 24.

Color of Wax-Scales Influenced by Pollen.

EDITOR AMERICAN BEE JOURNALS—Since returning home from the Chicago-Northwestern Bee-Keepers' convention, I have been thinking over the matter of the discussion of the question of the color of the scales of wax as they come from the wax-pockets, and am persuaded that the matter of the pollen, which is one of the most important articles of food for the bees, was not given sufficient consideration. You remember, great stress was given, during the discussion, to the different colors of honey; but, it was said that food cut no figure, for wax from buckwheat honey was of the very whitest, overlooking the fact that pollen from the buckwheat blossoms is of the very whitest also.

We know that cream and butter is colored a deeper yellow when the dairy cows feed on early summer grasses, while dandelion blossoms are plentiful; also, when fed on carrots. Again, beef cattle fed on yellow Swedish turnips will not only have the flesh tainted with the feed, but the tallow will be tinged with yellow. So, I believe, it is with the bees. Pollen, being an important part of their food, dominates the color in the wax. This explains why buckwheat honey is capped so exceedingly white. Whenever and wherever the prevailing pollen is yellow, the scales will be likely to partake of that color, and so of any other shade of coloring.

Once in Ohio, my bees, about 80 rods from a 15-acre field of goldenrod, standing as thick as though having been carefully drilled, put in a very considerable quantity of surplus honey from this field. The cappings were of a dusky yellow—not travel-stained but the wax was of that color. So I'm inclined to think that the wax-scales are not always white, as some think; nor always of a cream color, as some others think, but partake largely of the color of the pollen on which the bees feed. So that, where the flowers of a locality produce white pollen, there the wax will be white; where the flowers produce yellow pollen, the wax will partake of the same color. To contend over the matter, would be like the contention of the two knights over the color of a shield—both were right, and both were wrong.

WM. M. WHITNEY.

Batavia, Ill.

Hatching Chicks with Incubators.—While the American Bee Journal is not a poultry paper, yet so many of its readers are also interested in the raising of poultry, that we have decided to publish the following excellent article by that long-time poultryman, Mr. Robert H. Essex, of Buffalo, N. Y.:

Farmers are conservative in taking up new ideas; conservative in buying new things. They have to be. Nevertheless, when they see prospective profits oozing through the safety-valve of a new or improved implement, they feel that they must have it, even if they have to give a note for it, or encumber their farm with a new mortgage.

That's farm progress, which, interpreted, signifies prosperity on the farm.

No farm can be complete, no farmer can be superlatively prosperous, where progress in labor-saving equipment is ignored. And this applies as well to incubators as to any other implement.

Where not many years ago 9 out of 10 farms had never heard of an incubator, today the word is passing from farm to farm that the profits are larger, the work less onerous, the hatches more sure, and the hens are taking fewer holidays—laying more eggs; not all on account of incubators, but primarily on account of the incubator, and secondarily on account of the large amount of book-knowledge distributed with it. The farmer's wife is doing her share in the profit-making. She always has done it; but now she is gaining recognition as a partner in the business. This is having—it has had—its effect, and the result is, farmers are now posted on poultry profits. They will continue to be posted; and those who have been operating incubators will go back to hen-incubation only when they return to the old custom of treading out the grain with oxen—only when they are prepared to put the cream separator on the shelf.

Poultrymen who are in the business commercially—whose living depends upon the profits—would as soon think of threshing the grain with the old-time flail, as they would of hatching chicks or ducklings with hens or ducks. The thought would be absurd. Without the incubator they would have to go out of business.

Before the introduction of incubators large commercial plants were an impossibility. Mr. James Rankin gets the credit of putting the first lot of ducklings and broilers on the market in considerable numbers, and making it pay. But James Rankin's only salvation was the invention of an incubator. Without its aid he found he could not make a business of raising poultry for market at a profit; so he made one.

That was many years ago. The incubator of today has improved as time has rolled on, but no more need be said regarding the future of the incubator (the built-to-hatch incubator) in the poultry business. Hens will continue to be used where only a dozen or two chickens are intended to be kept for home use; but on the farm where chickens can be fed cheaply and are raised by fifties or hundreds, the time-saving incubator, the economic method will be—is—adopted.

The farmer and his wife sometimes face a disconcerting situation when they have finally decided that they wish to get more of the poultry profits by buying an incubator. The question arises, "Which incubator shall I buy?"

I may advise them here except generally. There are a number of good incubators on the market; and there are a number of built-to-sell machines that the farmer cannot afford to experiment with; but the present day farmer has his eye-teeth cut, and knows he cannot get something for nothing. To be successful in raising poultry one must use business-like methods with business-like equipment.

In buying an incubator go about it the same way you would if you were buying any other agricultural implement. I might advise again and again, but I cannot give better advice than that. Think it over; and be as particular as you would in trading horses.

Mr. Editor, when you personally know of poultry plants each using from 50 to 100 incubators; of plants hatching 40,000 ducklings in a single season; of fanciers hatching their New York-Chicago-Boston winners in incubators, and raising them in brooders, there's not much left for me to say. It is not evidence of the utility of incubators that is wanted, because anybody can get that in any down-to-date incubator manufacturer's catalog—evidence on the size of the poultry business; on the profits in the business; on the decadence of "mother" hen (unless the hen that lays the eggs is the mother); and the coming into her own of the hen that never could be made to sit. That is all common knowledge.

I believe the farmer is lacking in confidence. That's all. Confidence that he'll get what he pays for. Yet, it is certain that he will get exactly what he pays for—no more, no less. Manufacturers' profits are not big these days. There's not much money in making incubators and brooders; and if the farmer and his wife exercise their judgment in buying (and not expect to make a silk purse out of a sow's ear); they will certainly be successful in the purchase and use of down-to-date equipment for hatching.

That is the way to secure the bulk of the profits from poultry on the farm.

Buffalo, N. Y.

ROBERT H. ESSEX.

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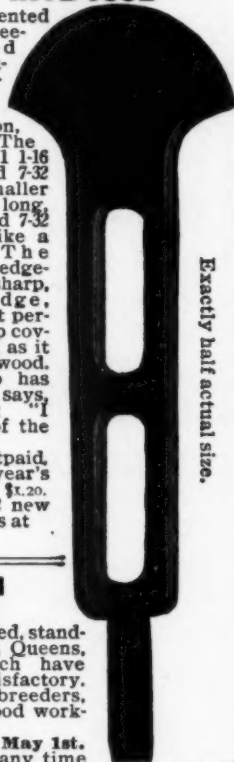
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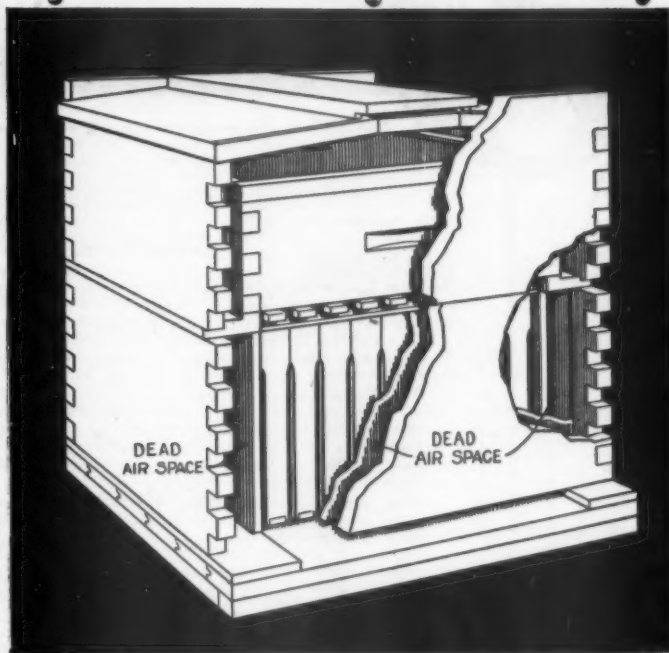
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SIDNEY, MONT., Dec. 21, 1909.

CUTAWAY HARROW CO., Higganum, Conn.
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breaking, preparatory to sowing flax—photograph taken June 24, 1909.

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I send you this photograph, these statements, and a reference to pages 60 and 61 of Montana's Farmers' Bulletin No. 1 (in which your machine is mentioned), to lend force to the suggestions I wish to make. You have, no doubt, heard of the agitation or movement known as "dry farming." I am a "dry farmer." I consider this "dry farming" movement a great chance for you, and a world of good for the farmers. The bulletin referred to advises the use of your machine, and all lecturers on this subject advocate double diskings. J. A. MCGLYNN.

Full particulars regarding the Cutaway Tools, and their many uses, can be had by writing the Cutaway Harrow Co., 913 Main St., Higganum, Conn., and mentioning the American Bee Journal.

Ruby Nugget Tomato.—For several years the Golden Nugget, a popular yellow English variety of Tomato, has been grown, and has been kept quite pure. Two years ago, however, one plant produced bright red fruit which were a trifle larger than the Golden Nugget. It was so loaded with fruit that count was kept, and it was found that over 700 were produced on the one plant. During the past season quite a large field of this variety was grown, and it retained its characteristic branching habits, enormous yield, beauty and quality of fruit, which, while not large, is of exquisite flavor. The Iowa Seed Co., of Des Moines, Iowa, has exclusive sale of it this season, and are introducing it under the name of "Ruby Nugget Tomato." Believing that our readers would be glad to give it a trial, we have arranged with the above company to send a trial packet of about 25 seeds free to every one who wishes to test it. A postal card request sent to them is sufficient, provided you mention the American Bee Journal. They will also send a copy of their large illustrated seed catalog with the seed, if desired; but if you have their catalog for this year, please say so.

Wants and Exchanges.

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

Bee-keeper's Exchange.—Those wishing to buy or sell, please send list of wants.
EDWIN EWELL, 704 Elm St., Waseca, Minn.

Eggs for Hatching.—Single Comb White Leghorns. Send for prices.
3A3t SAMUEL RAPP, Morton, Ill.

WANTED—Old bee-keeper's literature. Send descriptive lists, priced.
EDWIN EWELL, 704 Elm St., Waseca, Minn.

Golden Wyandots. Best and most beautiful chicken on earth. Stock and eggs for sale. J. R. DOUGLAS, Mound City, Kan. 3A3

WILL EXCHANGE GLADIOLI.—I have quite a collection of these flowering bulbs. To increase the same, I will exchange good blooming-size corms for varieties I have none of. I will also exchange Dahlias; only one tuber of a kind. What have you? Address, W. A. PRYAL, 50th St., near College Ave., Oakland, Calif.

GLADIOLI AND DAHLIAS.—I have a splendid mixed collection of Gladioli in various colors, shapes and sizes that I am offering in bulb form at 25 cents for 2 hundred, by mail. This is a good way to get a start by growing your own bulbs. Some will bloom the first year; the great majority the second year. Dahlia tubers, named kinds, 15 to 25 cents each. Address, W. A. PRYAL, 50th St., near College Ave., Oakland, Calif.

Strawberries Lead to Fame!—Can you do one useful thing better than any other living person? If you can, you have a fortune within your grasp. Here is an example that illustrates the point:

Once upon a time a young farmer named Thomas decided that he would spend his life learning one thing thoroughly. He determined to grow strawberry plants and nothing else.

His first move was to find the best strawberry-growing soil in the United States.

Next, he bought the most select varieties of strawberry plants on the market.

Then he gave his thoughts and energies to producing new and more productive strains of strawberries. For 3 or 4 years Thomas kept "sawing wood," though nobody paid any attention to him.

But today—20 years later—nearly everybody knows of W. W. Thomas, the Strawberry-Plant Man. Thomas' strawberry plants are flourishing in every berry-producing district in the United States. Thomas' strawberries—rich, red and juicy—are in strongest demand in the great New York, Chicago and other world markets.

The best plants take up no more space, need no more attention, and cost little or no more than the ordinary kind. So address a post card to "W. W. Thomas, the Strawberry-Plant Man, 152 Main St., Anna, Ill." Tell him that you want his 100 Strawberry Book and prices. Thomas is the authority on strawberry plants. His place is headquarters for strawberry information.

Engravings for Sale.

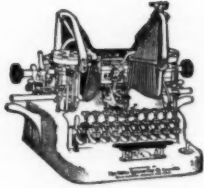
We are accumulating quite a large stock of bee-yard engravings and other pictures used from time to time in the American Bee Journal. No doubt many of them could be used by bee-keepers in their local newspapers, on their letterheads, on souvenir cards, or in other profitable or interesting ways. If we can sell them it will help us to pay for others that we are constantly having made and using in these columns.

We do not have a catalog or printed list of the engravings, but if you will let us know just which you want we will be pleased to quote you a very low price, postpaid. Just look through the copies of the Bee Journal and make your selection. Then write to us.

GEORGE W. YORK & CO.

146 West Superior Street, - CHICAGO, ILL.

17 Cents a Day Buys an OLIVER



SAVE YOUR PENNIES AND OWN

The OLIVER Typewriter

The Standard Visible Writer.

Can you spend 17 cents a day to better advantage than in the purchase of this wonderful machine?

Write for Special Easy Payment Proposition, or see the nearest Oliver Agent.

THE OLIVER TYPEWRITER COMPANY
47-55 Dearborn St.,
CHICAGO, ILLINOIS

Please mention Am. Bee Journal when writing.

Not Cheap Queens, But Queens Cheap

Prices of 3-Band Queens		1	6
Untested Queens.....	\$.75	\$ 4.20	
Tested Queens.....	1.00	5.70	
Breeder's Queens.....	5.00		
Golden or 5-Band Queens		1	6
Untested Queens.....	\$ 1.00	\$ 5.70	
Tested Queens.....	1.50	8.70	
Breeder's Queens.....	10.00		
3-Band Nuclei		1	6
One-frame, Untested Queen...	\$ 1.75	\$ 11.20	
Two " " Tested " " " "	2.25	13.20	
One " " Tested " " " "	2.00	11.70	
Two " " Tested " " " "	2.50	14.70	
5-Band or Golden Nuclei		1	6
One-frame, Untested Queen...	\$ 2.00	\$ 11.70	
Two " " Tested " " " "	3.00	17.70	
One " " Tested " " " "	2.50	14.70	
Two " " Tested " " " "	3.50	20.70	

Rearing from the best 3 and 5 Band Red Clover Italian Breeder Queens.

DIRECTIONS FOR BUILDING UP WEAK COLONIES—10 cents.

W. J. Littlefield, Little Rock, Ark.

Please mention Am. Bee Journal when writing.

We have just received a Car of

! California Extracted Honey !

If in the market, write us for Sample and Price.

C. C. CLEMONS PROD. CO.

2Atf KANSAS CITY, MO.
Please mention Am. Bee Journal when writing.

Splendid Trees and Shrubs FREE

We have made some remarkable offers in connection with our magazine in the past, but never one that compared with this. You will want to snap this one up quick. The collection we are going to give you, if bought at retail from a Nursery would cost you several dollars. We have contracted for a large number of these collections and propose to give the entire seven trees and shrubs away, absolutely **FREE** to new subscribers to The Fruit-Grower, for the purpose of creating a greater interest in horticulture. Here is the collection we offer you **FREE**:

- No. 1—One Winter Banana Apple Tree—Fine, vigorous grower, fruit medium to large; smooth; color a bright golden yellow.
- No. 2—One Eiveland Raspberry Apple Tree—Best summer apple; orange-yellow; striped, splashed with rich red; flesh fine.
- No. 3—One Little Grape Vine—Succeeds both north and south; vigorous; deep red; heavy bearer; berries large and tender.
- No. 4—One Tulip Tree—A magnificent native tree of tall, pyramidal shape; tulip-like flowers; allied to the Magnolia.
- No. 5—One Spirea Van Houttei—Finest of all Spireas. In May and June plant is covered with beautiful white flowers.
- No. 6—One Hydrangea—Comes into bloom just when there is a scarcity of white flowers; blooms very freely.
- No. 7—One Rose, General Jacqueminot—One of the very hardest and most popular; velvety crimson; very vigorous.

They are exceptionally fine one-year plants—will be carefully bundled and sent **FREE**, all charges prepaid, to anyone who accepts this offer and sends us \$1 for 1 year's subscription to The Fruit-Grower, \$2 for 3 years, \$3 for 5 years, or \$5 for 10 years. You will be delighted with the collection, while each issue of The Fruit-Grower will be worth several times the year's subscription price to you if you are the least bit interested in farm, fruit or flowers. The January issue was our Annual Spraying Number; February issue our Annual Gardening Number—either issue worth \$1.00 to anyone who plants a tree or a bed of vegetables—we will send sample copies **FREE** as long as they last. The Fruit-Grower is acknowledged to be the world's greatest fruit and farm magazine, beautifully printed and illustrated, monthly, and consists of from 60 to 100 pages each issue.

This free tree offer is open to everyone—it is our greatest offer and effort to create more interest in horticulture and to make new friends for The Fruit-Grower. All we ask in addition to the subscription price is that you send us the names of five friends or neighbors who are also interested in horticulture, so that we may send them **FREE** sample copies of The Fruit-Grower to let them see what a helpful magazine we are publishing. Our magazine alone is worth more than the money you send, and we give the plants mainly to secure your good will and names of fruit-growers.

Read the description of the trees and shrubs and remember that you get all **Seven** of them **Free** with a year's subscription to The Fruit-Grower. Send your order in today, or if you are not acquainted with The Fruit-Grower, we will send sample copy **Free** and beautiful illustrated circular showing trees and flowers in natural colors. In writing use coupon below; put names and addresses of five friends on separate sheet of paper. If you want specimen before ordering, simply sign your name and address and write the word "Sample" on Coupon.

THE FRUIT GROWER,
ST JOSEPH,
MO

COUPON
The Fruit-Grower,
St. Joseph, Mo., Box 591
Enclosed find \$.....
for year's subscription
and **FREE** collection of Trees
and Shrubs as per your offer. List
of names is also enclosed.

Name.....
Town.....State.....

Please mention Am. Bee Journal when writing.

50,000 Copies "Honey as a Health-Food" To Help Increase the Demand for Honey

We have had printed an edition of over 50,000 copies of the 16-page pamphlet on "Honey as a Health-Food." It is envelope size, and just the thing to create a local demand for honey.

The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last is devoted to "Honey Cooking Recipes" and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey as a food, the more honey they will buy.

Prices, prepaid—Sample copy for a 2-cent stamp; 50 copies for 90 cents; 100 copies for \$1.50; 250 copies for \$3.00; 500 for \$5.00; or 1000 for \$9.00. Your business card printed **free** at the bottom of front page on all orders for 100 or more copies.

Address all orders to

GEORGE W. YORK & CO.,

Chicago, Ill.

North-West Breed!!**HARDY GOLDEN
and
RED CLOVER
ITALIAN QUEENS**

I believe Bee-Keepers of the North-West and Pacific States appreciate the fact that **Reliable Queens** can be secured near home. We thank one and all for the liberal patronage given us in the past.

As the Queen-Rearing Business of Sires Bros. Co. is now owned by myself, I want to furnish you as **GOOD QUEENS** (and better, if possible) this season.

By fair and honorable dealings, and **GOOD QUEENS**, I hope to secure the patronage of all wishing to secure a Superior Stock of Bees. Order now. Delivered when wanted:

Select Untested, \$1 each; 3 for \$2.75; 6 for \$5.; doz., \$9.50.

Tested, \$1.50 each; 3 for \$4.25; 6 for \$8.00; doz., \$14.00.

Select Tested, \$2 each; 3 for \$5.75; 6 for \$9.25; doz., \$16.00.

Untested Queens ready May 1st.

Tested Queens ready to mail any time.

Price-List Circular of Queens, Nuclei, Bees by the Pound, etc., on Request.

**Virgil Sires, NORTH YAKIMA
WASHINGTON.**

Please mention Am. Bee Journal when writing.

**1910 PATENTED 1910
JANUARY 4th,**

(Serial No. 505,633)

WHY is it that the bee-keepers all over the world are losing 1/4 of their bee-families

BECAUSE the rains and the intense heat of the summer warp the bottom of the bee-hives into a form like the bottom of a stiff hat. Through such warping thousands of moths, excluded bees, and other insects continually attack the inner families and destroy them.

WHY do we put stones, or other weights, on the top of our bee-hives?

IN ORDER so the winds don't blow off the same.

WHY don't you seal (lock) water- and airtight all your old and new bee-hives, top as well as bottom, with my **patent Safety Sealing Clamp or Locks**?

I will sell my Patent Hive Clamps, 50 cents for 4 sets, enough for one bee-hive. The Clamps are made from galvanized tin, and the springs are made of steel wire, and painted well so they will not rust. For a 4-set order I charge 10 cents extra for express; and on 8 or more sets I will pay the express charges to any place in the U. S. A.

When ordering, please give the exact outside dimensions of your hive. For sale only in the United States, by the inventor. Address,

JOHN TOTH,

Bee-Keepers' Supplies

From East to West,

Rt. 5, Mapleton, Ill., U.S.A.

Please mention Am. Bee Journal when writing.

Alsike Clover Seed.

Small and large Red, Alfalfa, and Timothy Seed for sale. Seed re-cleaned and choice. Write for prices.

Catalog of APIARIAN SUPPLIES FREE. Address,

F. A. SNELL,

2A3 MILLEDGEVILLE, Carroll Co., ILL.
Please mention Am. Bee Journal when writing.

For Sale 12 Indian Runner Duck eggs, \$1.00.
15 White Wyandotte eggs, \$1.00.
15 Rose Comb Rhode Island Reds, \$1.50. 2A3t
J. F. MICHAEL, Rt. 1, Winchester, Ind.

MARSHFIELD BEE-GOODS

FRIEND BEE-KEEPER—We are prepared to fill your orders for **Sections**. A large stock on hand. Also a **Full Line of Bee-Supplies**. We make prompt shipments.

MARSHFIELD MFG. CO.,

Marshfield, Wis.

IOWA—J. W. Bittenbender, Knoxville, Gregory & Son, Ottumwa.

KANSAS—S. C. Walker & Son, Smith Center.

MICHIGAN—Lengst & Koenig, 127 South 13th St., Saginaw, E. S.

S. D. Buell, Union City.

NEBRASKA—Collier Bee-Supply Co., Fairbury.

CANADA—N. H. Smith, Tilbury, Ont.

ARIZONA—H. W. Ryder, Phoenix.

MINNESOTA—Northwestern Bee-Supply Co., Harmony.

ILLINOIS—D. L. Durham, Kankakee.

OHIO—F. M. Hollowell Harrison.

TEXAS—White Mfg. Co., Blossom.

WISCONSIN—S. W. Hines Mercantile Co., Cumberland.

J. Gobell, Glenwood.

Please mention Am. Bee Journal when writing.

**Untested Italian Queen-Bees
Our Standard-Bred**

**6 Queens for \$4.00; 3 for \$2.10;
1 for 75 cents.**

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

GEORGE W. YORK & Co.:—The two queens received of you some time ago are fine. They are good breeders, and the workers are showing up fine. I introduced them among black bees, and the bees are nearly yellow now, and are doing good work.
Nemaha Co., Kan., July 15. A. W. SWAN.

GEORGE W. YORK & Co.:—After importing queens for 15 years you have sent me the best. She keeps 9 1-2 Langstroth frames fully occupied to date, and although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week.
Ontario, Canada July 22. CHAS. MITCHELL.

GEORGE W. YORK & Co.:—The queen I bought of you has proven a good one, and has given me some of the best colonies.
Washington Co., Va., July 22. N. P. OGLESBY.

GEORGE W. YORK & Co.:—The queen I received of you a few days ago came through O. K. and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee line.
Marion Co., Ill., July 13. E. E. MCCOLM.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is 75 cents, or with the old American Bee Journal for one year—both for \$1.40. Three Queens (without Journal) would be \$2.10, or 6 for \$4.00. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-page. You cannot do better than to get one or more of our fine Standard-Bred Queens.

George W. York & Co., 146 W. Superior St. Chicago, Ill.



Good Queens

If you are going to want any Queens for increase, or replacing old queens next June, it is time to begin to think about it. I have been breeding leather-colored Italian queens for years, and they are giving excellent satisfaction. If you are interested, write. Good queens; no disease; prompt shipment, and absolute satisfaction guaranteed. Prices: June, one, 00c; three, \$2.50; six, \$4.75; doz., \$9.00; 20 or more at 60c each. 2Aot

S. F. Trego, Swedona, Ills.

Please mention Am. Bee Journal when writing.



Crown Bone Cutter

Hens fed out green bone lay more eggs. Get a Crown Bone Cutter. Send to-day for catalogue. Wilson Bros., Box 914, Easton, Pa.

BEST MADE
Lowest
in Price

Please mention Am. Bee Journal when writing.

Bees, Fruit, Poultry

A GRAND COMBINATION AND A SURE MONEY MAKER—Poultry thrives on orchard insects and bugs; bees get honey from orchard blossoms and fertilize the fruit. No work, small expense and big profits from the honey, eggs and fruit you sell.

Fruit growing pays big! \$300 an acre is nothing unusual from Apples, Peaches, Plums, Blackberries, Raspberries, Strawberries, etc.

Let me send you, charges prepaid and free, my grand Combination Catalog on Orchard Trees, Small Fruit and Farm Seeds. I am giving away 25,000 live, hardy fruit plants, and you will get one of them in proper season if you ask for it now. Catalog free. Write to-day.

**W. H. SCARFF,
NEW CARLISLE, OHIO.**

Please mention Am. Bee Journal when writing.

14 1/2 Cents a Rod

For 23-in. Hog Fence; 15 3/4-in. for 26-in.; 18 3/4-in. for 31-in.; 23-in. for 34-in.; 28-in. for 41-in. Farm Fence. 50-inch Poultry Fence 33c. Sold on 30 days trial. 30 rod spool Ideal Barb Wire \$1.55 Catalogue free.

**KITSELMAN BROS.,
Box 85 MUNCIE, IND.**

Please mention Am. Bee Journal when writing.

Langstroth on the Honey-Bee

Revised by Dadant. Latest Edition.

This is one of the standard books on bee-culture, and ought to be in the library of every bee-keeper. Bound in substantial cloth, and has nearly 600 pages. Revised by that large, practical bee-keeper, so well known to all bee-dom—Mr. C. P. Dadant. Each topic is clearly and thoroughly explained, so that by following the instructions of this book one can not fail to be wonderfully helped on the way to success with bees.

We mail the book for \$1.20, or club it with the American Bee Journal for one year—both for \$2.00. This is indeed a splendid chance to get a grand bee-book for a very little money.

GEORGE W. YORK & CO.

146 W. Superior St. CHICAGO, ILL.

Please mention Am. Bee Journal when writing.

BEES, NUCLEI, and QUEENS

For many years I have been selling bees and queens, and guaranteeing satisfaction in every way. I will be in the business more extensively than ever during the season of 1910. I have mailed queen-bees practically all over the world. My prices the coming season will be as follows, for **Italian**

BEES

Full colonies with Tested Queens, in 8-frame Langstroth hive, \$7.00 per col.; in same hive with 10 frames, \$7.50. Colonies in lots of 5 or more, 25 cents per colony less.

NUCLEI

One 3-Hoffman-Langstroth-frame Nucleus, \$2.50; in lots of 6 or more at \$2.25 each; price of queens to be added. Orders for nuclei filled about May 10th to 15th, and thereafter.

QUEENS

Tested Italian, each \$1.50; 6 for \$7.50; or \$13.00 per dozen.

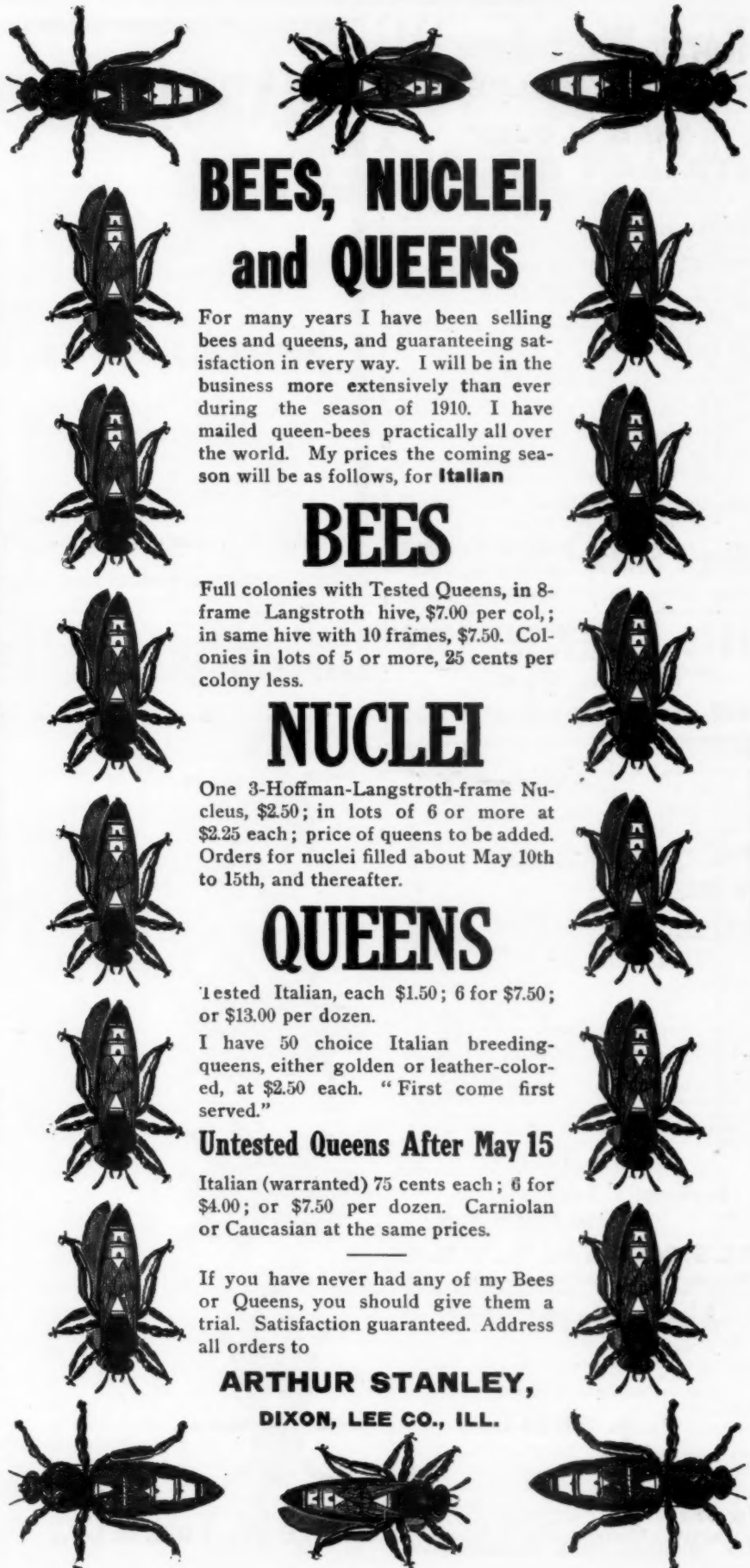
I have 50 choice Italian breeding-queens, either golden or leather-colored, at \$2.50 each. "First come first served."

Untested Queens After May 15

Italian (warranted) 75 cents each; 6 for \$4.00; or \$7.50 per dozen. Carniolan or Caucasian at the same prices.

If you have never had any of my Bees or Queens, you should give them a trial. Satisfaction guaranteed. Address all orders to

**ARTHUR STANLEY,
DIXON, LEE CO., ILL.**



Tennessee-Bred Queens!

All from Extra-Select Mothers,
Davis' Best, and the
Best Queens Money Can Buy

38 Years' Experience in Queen-Rearing.
Breed Three-Band Italian Queens Only.

November 1st to July 1st			July 1 to Nov. 1				
I	6	12	I	6	12		
Untested.....	\$1.00	\$5.00	\$ 0.00	\$.75	\$4.00	\$7.50	Select Breeder .. \$4.00
Select Untested...	1.25	6.50	12.00	1.00	5.00	9.00	Nuclei; no queen 1 fr 2.00
Tested	1.75	9.00	17.00	1.50	8.00	15.00	" " " 2 " 3.00
Select Tested....	2.50	13.50	25.00	2.00	10.00	18.00	" " " 3 " 4.00
							Colony, " " 8 " 8.00

Select queen wanted and add price to price of nucleus or full colony.

For queens to be exported, add 20 percent to these prices, except to Canada, Cuba or Mexico.

JOHN M. DAVIS,

Dealer in, Importer and Breeder of

ITALIAN QUEEN-BEES

Depot, Telegraph and Express Offices,
Ewell Station on L. & N. R. R.

SPRING HILL, TENN.

I Grow Strawberry Plants With as Great Care As You Buy Them

If you buy my plants you get good, strong, healthy ones that are grown in a natural strawberry country where soil, climate and season each help to make hardy and productive plants. You get plants true to name. Whether you plant a dozen or 100,000 your order can be filled promptly from the stock of 1910 plants—I never grew a finer 200-acre lot of them. Send for 1910 3-color catalog. It is free, and I want you to have a copy of it.



W. W. THOMAS
The Strawberry Plant Man
152 Main Street, Anna, Ill.

EXTRACTING MADE EASY

by using

MILLER AUTOMATIC DECAPPERS

\$5 to \$35. Catalog Free.

APICULTURAL MANUFACTURING CO.,
Providence, R. I. 7Atf

A Bargain in Poultry Supplies

Cornell Incubators and Mann Bone Cutter for sale at about half price.

232-Egg capacity Incubator, only \$15.00
364- " " " " " 18.00
Mann No. 11 Power or Hand Bone
Cutter, for only..... 18.00
Mann Clover Cutter, iron stand. 6.00

Leg Bands, Poultry Markers, and Egg-Testers, at half price.

The above machines are slightly damaged, but about as good as new. Never used, but tested and guaranteed. Address,

Arnd Honey and Bee-Supply Co.,
148 West Superior St., CHICAGO, ILL.

ROOT'S GOODS

for 1910 are better than ever. We carry full line of them.

MR. BEEMAN, take notice! For low freight and quick service our location cannot be excelled in the State. Don't delay. Order now. You can be saving your honey crop while the tardy fellow is waiting for his goods to arrive.

Our 1910 Bee-Line

is of the best. We are making a specialty of high-grade untested queens from a famous strain of honey-gatherers, at \$1.00 each. Order now, and be sure to get one for our delivery after May 15, 1910. Remember that cheap queens and poor blood do not pay.

Rea Bee & Honey Co.,
Reynoldsville, Pa.

Please mention Am. Bee Journal when writing.

Standard-Bred Queens!

Reared from our Superior Golden and 3-banded Italian stock. The cells are all built in very strong colonies. Our Queens produce bees that store from 150 pounds in Colorado to 250 pounds in N. Y. State, with but little swarming. Queens ready April 1st: Untested, \$1.25 each; 6 for \$6.00; 12 for \$10. Tested, \$1.50 each; Select Tested, \$2.50; Breeders, \$5.00.

Full colonies and Nuclei for sale.

Mr. F. M. Jones, of Lockport, N. Y., writes as follows about our Queens and Bees:

LOCKPORT, N. Y., Sept. 9, 1908.

Mr. T. S. Hall, Jasper, Ga.

Dear Sir:—Your letter of the 2d received. I have taken only a part of the honey. The bees are gathering honey very fast. The most of the colonies are yellow as gold and very gentle. I think your Italians are very gentle. I bought 2 dozen from another breeder 1st of July. They are not as gentle as yours. You must remember, I had only 45 colonies of bees last spring—7 strong ones and 38 very weak ones that I would have lost if the cold weather had lasted two weeks longer. Some of them did not have bees enough to cover one frame, and yet their crop will be about 3 tons of white honey. I know you would like to know how I increased to 134 colonies. I had 2 of them swarm out, and I made 14 nuclei from them, and put your young queens with them. I had 5 swarms of black bees come to me and go in the empty hives about the 1st of June. After they had been in the hives 3 weeks I divided them into 20 nuclei and killed the black queens and put in 20 of your nice young Italian queens with them. The rest of the colonies I made by taking frames of hatching brood from the old colonies and putting them in empty hives. I could not have made that increase without the aid of all drawn-out combs ready for the bees. The strongest colonies had 8 stories to the hive, 8 frames each—40 frames all together; 8 frames of brood, 32 frames of honey, 8 lbs. of honey to the frame, 256 lbs. of white honey from the strongest colonies. They have 2500 pounds of honey on their hives now, Sept. 9th. Our Fair was last week. I got \$38.50 in premiums on bees and honey; \$5 for the best Italian queen.

Yours truly,

F. M. JONES.

Discount given on large orders. Price-list ready soon.

T. S. Hall, Jasper, Pickens Co. Ga.

Please mention Am. Bee Journal when writing.

M. H. HUNT & SON

The best time to buy your goods is during the fall and winter months. We are making **Liberal Discounts for Early Orders**, and would like to quote you **net prices** on your needs for next season.

—BEESWAX WANTED—

LANSING, - MICHIGAN.

Bee-Supplies

Lewis Goods in Iowa at Factory Prices

Write me for prices on Goods you need for 1910. **Discount for Early Orders.** Send for Catalog. It will be ready about January 1st.

—Beeswax Wanted—

W. J. McCARTY, Emmetsburg, Iowa



CLARK'S
DOUBLE ACTION HARROW & CULTIVATOR
FOR 100% CROPS

With this tool more different kinds of work can be done, with less effort, than with any other. **CLARK'S** is the only Disk Cultivator that completely embodies the double action principle. It will do the work of several disk machines that would cost you several times as much, and do it more thoroughly, because it has 4 gangs instead of only 2. The draft is always from centre-suitable for 2 light horses. Equipped with Extension Head and Jointed Pole, and when so ordered two large disks for listing are supplied.

Send today for our free Book, "Large Hay Crops."

CUTAWAY HARROW COMPANY,
Main St., HIGGANUM, CONN.



THE ORIGINAL
"CUTAWAY."

Please mention Am. Bee Journal when writing.

American Bee Journal

— For the Best Goods —

and **LOW FREIGHT** send your
orders for **BEE-SUPPLIES** to

The A. I. Root Company, Institute Place
CHICAGO, ILLINOIS



We carry on hand constantly a full line of bee-supplies. We have the best shipping facilities, and can fill your orders promptly the year round.

We have carloads coming from the factory constantly to replenish our stock, so that our goods are always bright and new, and we keep our assortments well up.

Send in your order now and take advantage of early order discounts.

Catalog on request. We will be glad to quote you delivered prices on any list you may send in. We have on hand now a large stock of Extracted honey. You will have to order quickly if you want some of this, as our honey always goes fast.

The A. I. Root Co., : : Chicago, Illinois

Institute Place

R. W. Boyden, Resident Manager.

Jeffrey Building

Take Elevator to Sixth Floor.

Telephone 1484 North.

We will pay 30 cents a pound for
Choice Quality Pure

BEESWAX

delivered New York, until further notice.

Alfalfa Honey

New Cans and Cases — Fancy Light, 8 cents a pound; Fancy Amber, 7 cents a pound, f. o. b. New York, in not less than 5-case lots. Will shade prices on larger quantities. Shall be glad to send samples.

HILDRETH & SEGELKEN,
265-267 Greenwich St.,
NEW YORK, N. Y.

Please mention Am. Bee Journal when writing.

Baby Chicks 8 cts. each. Eggs for hatching, \$4 per 100. All kinds poultry at lowest prices. Guarantee safe arrival anywhere. Write for price-list. 10A6t

CULVER POULTRY FARM 1015 Road, DENSON, NEBR.

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Elkhart Buggies

are the best made, best grade and easiest riding buggies on earth for the money.

FOR THIRTY-SEVEN YEARS

we have been selling direct and are **The Largest Manufacturers in the World** selling to the consumer exclusively.

We ship for examination and approval, guaranteeing safe delivery, and also to save you money. If you are not satisfied as to style, quality and price you are nothing out.

May We Send You Our Large Catalogue?

Elkhart Carriage & Harness Mfg. Co.
Elkhart, Indiana



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I'll Save You
\$26.50

on my 1910 Split Hickory Auto-Seat Buggy. Or, 25% saving guaranteed on retail price of any vehicle. Made to order. 30 days road test—2-year guarantee.

Let Me Pay the Postage on Big

Free Book to You

Shows 125 styles. Also harness. Beautiful color-views. Prices astonishingly low. Write me now.

H. C. Phelps, Pres.
The Ohio Carriage Mfg. Co.
Sta. 322, Columbus, O.



Please mention Am. Bee Journal when writing.

! For Sale !

10 to 50 pr. ct. Discount

All Hives and Appurtenances of every description.

Large amount still in the flat. New Hives set up, painted, but never used.

About 125 Hives used and unused.

Would make best terms to party buying all the property.

Call Saturdays P. M. or Sundays; or address,

P. W. DUNNE,

165 South Forest Ave.,
3A3t RIVER FOREST, Cook Co., ILL.

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American Bee Journal

CAPON TOOLS



CAPONS bring the largest profits—100 per cent more than other poultry. Caponizing is easy and soon learned. Progressive poultrymen use **PILLING CAPONIZING SETS**. Postpaid \$2.50 per set with free instructions. The convenient, durable, ready-for-use kind. Best material. We also make Poultry Marker 25c, Gape Worm Extractor 25c, French Killing Knife 50c. Capon Book Free. G. F. Pilling & Son, Arch St., Philadelphia, Pa.

Please mention Am. Bee Journal when writing.

Again to the Front with The Famous Banats



Having moved my Banat Apiaries from Sabinal to San Benito, Texas, I am now better prepared to furnish High Quality

QUEENS

and guarantee them purely mated. Prices: Untested Queens, each, 75c; per doz., \$8.00. Tested Queens each \$1.25; per doz., \$12.00.

My stock is pure and free from disease—the gentlest bees on earth.

GRANT ANDERSON,

2Atf SAN BENITO, TEXAS.
Please mention Am. Bee Journal when writing.

New Ruby Nugget Tomato

A grand novelty which originated on our place and is now offered for the first time. While not large, still it is a handsome fruit, of delicious flavor and wonderfully productive—over 700 fruits have been grown on one plant. A cash prize of \$10.00 will be paid to the person growing the largest number of Ruby Nugget Tomatoes on a single plant this year. Price is 35 cents per packet of 100 seeds, but to induce you to give our Choice Iowa Seeds a trial this year, we will send you a trial packet of about 25 seeds without charge, together with a copy of our large illustrated seed and plant catalog. If you have had our catalog this year, please say so. Mention this paper. IOWA SEED CO., Dept. 5 DES MOINES, IOWA.

Please mention Am. Bee Journal when writing.

BARNES' Foot-Power Machinery



Read what J. I. PARKER, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 50 chaff hives with 7-in. cap, 100 honey-racks, 600 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES, 906 Ruby St., Rockford, Ill.

Cook's Honey-Jar.

With patent AIR-TIGHT SANITARY STOPPER is the Best and Cheapest Honey-Jar made. Sold only by

J. H. M. Cook, 70 Cortlandt St., N. Y. City.

Send 10 cents (half postage) for sample Jar, and catalog of WELL-BRED BEES, QUEENS, HIVES, etc.

The oldest Bee-Supply Store in the East. 2Atf

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"If goods are wanted quick, send to Pouder"

ESTABLISHED 1880.

BEE-SUPPLIES

Standard Hives with latest improvements; Danzenbaker Hives, Sections, Foundation, Extractors, Smokers, Veils, and a complete stock of

Root's Standard Goods at Factory Prices

My equipment, my stock of goods, and my shipping facilities, cannot be excelled, and I ship goods to every State in the Union. Illustrated and descriptive catalog mailed free.

Finest White Clover Honey

on hand at all times. I Buy Beeswax.

Walter S. Pouder, Indianapolis, Ind.

859 Massachusetts Ave.

HAND-MADE SMOKERS

Extracts from Catalogs—1907:

Chas. Dadant & Son, Hamilton, Ill.—This is the Smoker we recommend above all others.

G. B. Lewis Co., Watertown, Wis.—We have sold these Smokers for a good many years and never received a single complaint.

A. I. Root Co., Medina, Ohio.—The cone fits inside of the cup so that the liquid creosote runs down inside of the smoker.

All Bingham Smokers are stamped on the tin, "Patented 1878, 1892, and 1903," and have all the new improvements.

Smoke Engine—largest smoker made.....\$1.50—4 inch stove

Doctor—cheapest made to use.....1.10—3 1/2 "

Conqueror—right for most apiaries.....1.00—3 "

Large—lasts longer than any other......90—2 1/2 "

Little Wonder—as its name implies......65—2 "

The above prices deliver Smoker at your post-office free. We send circular if requested.

Original Bingham & Hetherington Uncapping-Knife.

T. F. BINGHAM, Alma, Mich.



Patented, May 20, 1879. BEST ON EARTH.

LEWIS BEEWARE — Shipped Promptly

—SEND FOR NEW CATALOG—

Extracted Honey for Sale.

(Ask for Prices.)

Beeswax Wanted.

28c Cash—31c Trade.

ARND HONEY & BEE-SUPPLY CO. NOT INC.

(Successors to the York Honey & Bee-Supply Co.)

H. M. ARND, Proprietor.

148 West Superior St., CHICAGO, ILL.

BETTER FRUIT

The best fruit growers' illustrated monthly published in the world. Devoted exclusively to modern and progressive fruit growing and marketing. Northwestern methods get fancy prices, and growers net \$200 to \$1000 per acre. One Dollar per year. Sample copies free.

Better Fruit Publishing Co. HOOD RIVER, OREGON.

BEE-SUPPLIES.

40-page catalog free. Brimful of the latest make of hives, etc. Our supplies will please you in every way. Prices are right. We can make prompt shipments as we carry a full line of A. I. Root Co.'s supplies in stock. Don't fail to write us if you are in need of supplies. 2Atf

JOHN NEBEL & SON SUPPLY CO., High Hill, Montg. Co., Mo.
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FENCE Strongest Made
Made of High Carbon Double Strength Coiled Wire. Heavily Galvanized to prevent rust. Have no agents. Sell at factory prices on 30 days' free trial. We pay all freight. 37 heights of farm and poultry fence. Catalog Free. COILED SPRING FENCE CO. Box 89 Winchester, Indiana.

Swarming Prevented

A new method, just published, worthy of investigation by all progressive bee-keepers. Advantages claimed for the plan of treatment. No clipping of queens' wings—no caging of queens—not even necessary to look for queens; no pinching of queen-cells—no shook swarming—no dividing—no extra expense connected with the plan—plan simple and easy to carry out—satisfactory honey crop—saves time and labor. Send to

Dr. H. JONES, Preston, Minn.,

for his booklet, describing his method of treatment. Price, 25 cts. Process protected by copyright.

ALFALFA HONEY

—FOR SALE—

White, Heavy, Excellent

One 60-lb. Can, per pound 10c
Two " " " 9½c
20 or more Cans..... 8½c

Arnd Honey and Bee-Supply Co.,

148 West Superior St., - CHICAGO, ILL.

Honey Wanted.

All grades of Comb and of Extracted. 2000 cases of Buckwheat Comb wanted at once. What have you to sell? Third car of water-white Sage just in. Write for prices.

THE GRIGGS BROS. CO.

11 Atf TOLEDO, OHIO.

Queens & Bees

Also Honey. To close out will sell Buckwheat or Amber Comb at \$2.50 per case of 24 sections; and unfinished boxes at \$7.50 per hundred.

Have your orders for Bees and Queens booked now, as there will be a rush for stock this spring.

QUIRIN-THE-QUEEN-BREEDER,
Bellevue, Ohio.

For Sale About 25 Colonies of Bees in good condition.
GUSTAVE GROSS,
Lake Mills, Wis.

Please mention Am. Bee Journal when writing.

For Sale Excellent Bee - Location in Harrison Co., Iowa. Close to town, on good road; rural mail and telephone. Lots of Basswood and Clover. 200 Colonies of Bees, also, if desired. No disease. Good honey-house and caves. Favorable terms.

E. S. MILES, Dunlap, Iowa.

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HONEY AND BEESWAX

When consigning, buying,
or selling, consult

R. A. BURNETT & CO.

199 South Water St.

Chicago, Ill

BEE-KEEPERS

Write us now for our Catalog and get low prices on good, honest,

BEE-KEEPERS' SUPPLIES

Our specialty is making Sections. All other goods up-to-date.

AUG. LOTZ & SON, Cadott, Wis.

10A34t Please mention the Bee Journal.

Write Us To-Day

for our 1910 Catalog and let us tell you all about

DITTMER'S COMB FOUNDATION

and
WORKING Your WAX for You.

Write us for **Estimate** on full **Line** of **Supplies.** It will pay you, and costs nothing.

RETAIL and WHOLESALE.

Gus Dittmer Company, - Augusta, Wisconsin.



Latest Improved Hives & Supplies. Disc't on early orders. Catalog free. Send 25 cts. for 60-page Bee-Book for beginners.

J. W. ROUSE,
3 Atf MEXICO, MO.

Please mention Am. Bee Journal when writing.

CYPRIAN, Carniolan, Caucasian, Italian Queens
Select untested, \$1.00. Select tested, \$2.00.
Bees \$5 colony. Supplies and Honey. 6 Atf
W. C. MORRIS, Nepperhan Hts., Yonkers, N. Y.

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Until April 15th Flat N'd & P'd
One-story Hive, 8-fr. \$1.25 \$5.75 \$1.70 \$8.00
Supers..... .45 2.00 .60 2.75
Hive-Body & Frames .75 3.50 .95 4.50
GEO. E. KRAMER, Valencia, Pa.

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AGENTS: - IF I KNEW YOUR NAME, I would send you our \$2.19 sample outfit free this very minute. Let me start you in a profitable business. You do not need one cent of capital. Experience unnecessary. 50 percent profit. Credit given. Premiums. Freight paid. Chance to win \$500 in gold extra. Every man and woman should write me for free outfit.
6 Atf JAY BLACK, Pres., 305 Beverly St., Boston, Mass.

CRANE CELLULAR CASES

We take it for granted you are from
Missouri, and are prepared to show you

what the Dealers and Bee-Keepers who used the **Crane Cellular Case** last season think of them.

The first cost of the **Cellular Case** is much greater than the first cost of a wooden case. That is why the supply dealers are not pushing them.

We have decided to sell them direct to you, and give you the benefit of the lower price we are able to make on account of having no dealers to protect.

You owe it to yourself to investigate this Case and find how much you can save by using it, before ordering Cases for your 1910 crop of honey. Let us tell you about it now.

J. E. Crane & Son, Middlebury, Vt.

American Bee Journal

Honey and + Beeswax +

CHICAGO, Feb. 28.—There is a demand for A No. 1 to fancy white comb, of which there is very little on the market; it brings 17@18c; other grades of comb honey are not in much demand. The feeling in extracted is easier, with the white grades bringing 7@8c, according to quality and amounts taken. The amber grades from 6@7c. Beeswax in good demand at 32c. R. A. BURNETT & CO.

CINCINNATI, Feb. 28.—The market on comb honey is bare. Extracted honey is in good demand—sage, in 60-pound cans, 8@c; amber, in barrels, 6½@6¾c. Beeswax in fair demand at \$33 per 100 pounds. These are our selling prices, not what we are paying. C. H. W. WEBER & CO.

INDIANAPOLIS, Feb. 26.—There is a good demand for best grades of both comb and extracted honey, but jobbing houses are well supplied. Practically no honey is now being offered by producers, and jobbers are selling No. 1 and fancy white comb at 17@18c. Best extracted, 6@10c, according to quantity taken at one shipment. Poor demand for amber honey and no established prices. Producers are being paid 29@31 for good average beeswax. WALTER S. POWDER.

NEW YORK, Feb. 28.—Very little doing in comb honey. There is a fair demand for No. 1 and fancy white at 14@15c. Off grades and dark are rather neglected, and selling in a small way from 10@13c, according to quality. There is not much stock on hand, but some small lots are still coming along. Extracted in fair demand at former quotations as follows: California, water-white, 9c; white-sage, 8@8½c; light amber, 7½@8c; amber, 6½@7c. Southern and West India, in barrels, 65@75c per gallon, according to quality. Beeswax steady at 30c per pound. HILDRETH & SEGELKEN.

ZANESVILLE, OHIO, Mar. 2.—The demand for honey is perhaps not far from normal. For No. 1 to fancy white comb producers should receive 14@15c, and for best white extracted, 8@8½c, delivered here. Little demand for off grades. In a wholesale way comb brings 2@2½c and extracted 1@2c advance over these prices. For good clean beeswax, producers are offered 28c cash, 31c in trade. EDMUND W. PEIRCE.

KANSAS CITY, Mo., Feb. 28.—There is no comb honey in the hands of the jobbers; the demand is good. The supply of extracted is not large, but demand fair. We quote: No. 1 white comb, 24 sections to case, \$3.50 per case; No. 2 white and amber, \$3.35. White extracted, per pound, 7@7½c. Beeswax, 25@30c. C. C. CLEMONS PRODUCE CO.

BOSTON, Feb. 28.—Fancy white comb honey at 10@17c; No. 1, 15@16c. White, extracted, 8@9c; light amber, 7@8c; amber, 6@7c. Beeswax, 30@32c. BLAKE, LEE CO.

If you have not yet sent for My Catalog of

Bee-Keepers' Supplies

you alone are to blame. It's yours for the asking, and it will tell you where to get the

Best and Cheapest Supplies

in the country. Save Money. Save Time, and get the Best. 10 years in the business.

Chicago Freight-Rate to your Station.

H. S. DUBY, St. Anne, Ill.

Please mention Am. Bee Journal when writing.

Roses

4 Hardy Everblooming Roses, 2 yrs. old. The Finest in Existence Blooms from June till cut down by frosts. \$1.00 for the set—White, Pink, Red and Yellow. 1 extra bush free, for express. Order now: sent April.

PARK ROSE GARDENS, Altoona, Pa.
Please mention Am. Bee Journal when writing.

FALCON FOUNDATION

Years of experience in the manufacture of

FALCON COMB FOUNDATION

have made it PERFECT.

Bees like it, and the foremost

Honey-Producers Use It.

It helps materially to increase the

Honey Crop

(Send for our new Catalog.)

Ship us your

BEESWAX

to FALCONER, N. Y.

Will send shipping-tags, when you write asking for quotations.

We pay highest market prices.

W. T. FALCONER MFG. CO.

JAMESTOWN, N. Y.

SUPERIOR BEE-SUPPLIES

Specially made for Western bee-keepers by G. B. Lewis Co. Sold by Colorado Honey-Producers' Association, DENVER, COLO.

As Usual—

FRANKLIN, TENN., Feb. 19, 1910.

MR. C. H. W. WEBER,
Cincinnati, Ohio.

DEAR SIR:—Your consignment has arrived all O. K., and I find everything I ordered. I wish to extend many, many thanks for your promptness and fair dealing. All future orders will be sent to you.

Very truly yours,

W. A. MOORE.

I want you to notice Four Things in the above Letter :

I.—The goods reached Mr. Moore O. K. We know how to pack carefully and securely, and without any useless weight.

II.—He found everything ordered. We carry large stocks always on hand, and our system of checking prevents annoying mistakes.

III.—The advantages we have for prompt delivery are unsurpassed. If you want goods quick, send to Weber.

IV.—Fair dealing is now and always has been our motto.

CATALOGS have been mailed to nearly all our customers. If you have not received yours, send us a line and we will get one to you by return mail.

Yours for service,

2146 Central Ave., Cincinnati, Ohio.

C. H. W. WEBER & CO.

BEE-KEEPERS OF THE NORTH

BEE-KEEPERS OF THE WEST

Be Sure to get our **PRICES** on

B E E S W A X

Before selling your season's Wax
or
Let us send to you our prices for
Working your Wax into

DADANT'S FOUNDATION

Many large Honey-Producers prefer our Foundation to other makes, because the bees like it best.

We can use almost an unlimited quantity of BEESWAX, and we are buying at all times of the year **at highest cash and trade prices.**

During the season of 1909 we handled over 175,000 pounds of Beeswax.

DADANT & SONS, Hamilton, Illinois.

BEE-SUPPLIES OF ALL KINDS.

We Keep Only the Best.

Let us Figure on
Your Season's Supplies

1910 CATALOG

**Now Ready,
and Free for the Asking.**

BEE-KEEPERS OF THE EAST

BEE-KEEPERS OF THE SOUTH

Established 1864

Bee=Keepers' Supplies

☞ We manufacture and furnish everything needed in practical, up-to-date BEE-Culture at the very lowest prices. We make the celebrated **DOVETAILED HIVES** and the famous **MASSIE HIVES**. These are the most practical, up-to-date Bee Hives made and our extremely low prices place them within the reach of all bee-keepers. Our **HONEY EXTRACTORS** and **BEE SMOKERS** are the very best that can be had anywhere. *We guarantee satisfaction to every customer or refund your money and pay the transportation charges both ways.* This means that you can send back to us any goods you buy from us that are not satisfactory. We will exchange them or refund your money instantly without a question.

☞ If you haven't one of our **CHAMPION SMOKERS** you don't know what a good one is until you get one, (sample by mail \$1.00).

☞ Write today for our large illustrated catalog—it is free; it is one of the easiest catalogs to order from that you ever saw. *Remember our guarantee of entire satisfaction.*

☞ Write us for prices on any orders. *We can save you money.*

Kretchmer Mfg. Co., Council Bluffs, Iowa